ThinkStation

Personal Systems Reference Lenovo® ThinkStation® Workstations

April 2009 - Version 354

ThinkStation S20 (left)
ThinkStation D20 (right)

*Visit **www.lenovo.com/psref** for the latest version*

ThinkStation

Lenovo ThinkStation S10

Lenovo ThinkStation S10 (left)
Lenovo ThinkStation D10 (right)

Lenovo ThinkStation S10

Lenovo ThinkStation S10

Lenovo ThinkStation S10

Lenovo ThinkStation S10
with Lenovo ThinkVision Monitor

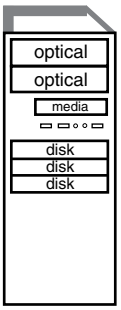
ThinkStation® S10 (6423) - TopSeller

Name	Type-model	Slot x bay	Processor	GHz	Cores	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Vista preload	Workhorse Global	Avail date
S10	6423-26U	5x6	E6750	2.66	2	2GB	1 x 250GB[2] SATA		DVD±RW	1 x FX370	1394		ES40	Bus64	No	Jan 08
S10	6423-27U	5x6	E6850	3.00	2	2GB	2 x 250GB SATA		DVD±RW	1 x FX1700			ES40	Bus64	No	Jan 08
S10	6423-28U	5x6	E6850	3.00	2	2GB	1 x 146GB SAS		DVD±RW	1 x FX1700			ES40	Bus64	No	Jan 08
S10	6423-29U	5x6	E6850	3.00	2	2GB	2 x 250GB SATA		DVD±RW	1 x FX1700	1394	X-Fi	ES40	Bus64	No	Jan 08
S10	6423-31U	5x6	Q6600	2.40	4	2GB	2 x 250GB SATA		DVD±RW	1 x FX1700	1394	X-Fi	ES40	Bus64	No	Jan 08
S10	6423-32U	5x6	Q6700	2.66	4	2GB	2 x 160GB SATA	1	DVD±RW	2 x NVS290			ES40	Bus64	No	Jan 08

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***
- ***These small and medium business (SMB) models are part of the US TopSeller™ Program***

Processor	**Intel® Core™ 2 Duo Processor E6750** or **E6850** with **dual-core**, 1333MHz system bus, and 4MB L2 cache or **Intel Core 2 Quad Processor Q6600** or **Q6700** with **quad-core**, 1066MHz system bus, and 8MB L2 cache
Implementation	Processor uses FC-LGA6 package, one LGA775 socket
Memory	**2GB** std, 8GB max, **PC3-8500 1066MHz DDR3, ECC**, dual-channel capable, four 240-pin DIMM sockets; *Non-italics:* standard memory in two sockets; two sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76 to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® NVS 290**, PCIe x16 adapter, 256MB, two single-link DVI-I via DMS-59 dongle, 21W *Some:* **NVIDIA Quadro FX 370**, PCIe x16 adapter, 256MB, one single-link and 1 dual-link DVI, dual DVI-I or dual VGA, 25W *Some:* **NVIDIA Quadro FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **160GB** or **250GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in ICH9R
SATA connectors	Six SATA connectors on planar
SATA DVD±RW	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	*Some:* LSI™ LSISAS3041E-R PCIe x4 adapter, 4-port, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel X38 Express Chipset**, Intel I/O Controller Hub 9 RAID (ICH9R) for RAID 0, 1, 5 support, SMSC® SCH5027D Super I/O

Tower



- Raven black color; metal case
- 6.9"W x 19.0"D x 16.8"H (without handle)
- 175mm W x 483mm D x 426mm H
- 36 lb (16.4kg) max configuration
- 31-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support

Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 3.5", 1" high, external, std media reader
Bay ④ 3.5", 1" high, internal, std disk
Bay ⑤ 3.5", 1" high, internal, std or opt disk
Bay ⑥ 3.5", 1" high, internal, std or opt disk

Slot 1: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 5: half-length, full-height, 32-bit PCI 2.3

Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), five analog audio ports (line-in, microphone-in, front-out, rear-out, center/sub-out), optical S/PDIF digital out
IEEE 1394 adptr	*Some:* FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear
Audio	High Definition (HD) Audio, Analog Devices AD1988A codec; *Some:* Creative Sound Blaster® X-Fi, PCI adapter, high-end sound adapter
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5754 and BCM5755, 2 x PCIe x1
Security chip	Integrated in ethernet controller BCM5755, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	650 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	3 to 5 fans (power supply, CPU, rear, opt front PCI [>75W graphics], opt front [SAS])
Rack mount	Rack shelf support

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Chassis intrusion switch
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
ENERGY STAR® 4.0-compliant

Preloaded operating system[20]
- Microsoft® Windows® Vista® Business Edition (64-bit)
✧ Vista Premium logo

Preloaded applications[5]
- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- ThinkVantage System Update
- System Migration Assistant
- Norton Internet Security™ (90 days of virus definitions)
- PC-Doctor™ (diagnostics)
- Adobe® Reader
- Microsoft Office 2007 Trial (60-day)
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW)

Accessories

1GB PC3-8500 DDR3 ECC UDIMM	41U5251
2GB PC3-8500 DDR3 ECC UDIMM	41U5252
500GB SATA 3.0Gb/s Disk (7200 rpm)	43R1990
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
Super Multi-Burner DL DVD±RW SATA 1.5Gb/s	41N5620
Blu-ray Burner/HD-DVD Player SATA 1.5Gb/s	43R1958
USB 2.0 Lenovo Multimedia Headset	40Y8518
USB 2.0 Lenovo Webcam	40Y8519
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L1700p 17" Monitor	9417HE2
ThinkVision L1940p Wide 19" Monitor	4424HB6
ThinkVision L2240p Wide 22" Monitor	4422HB6
ThinkVision L2440x Wide 24" Monitor	4421HB2
Wireless Kbd & Opt Wheel Mouse (via USB)	73P4067
Laser Tilt Wheel Mouse (USB, PS/2)	41U3074
Kensington® Cable Lock from Lenovo	73P2582
NVIDIA® Quadro® 512MB FX 570	45J7917
NVIDIA Quadro 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768
NVIDIA Quadro 768MB FX 4600	43R1769

Other accessories at **lenovo.com**/accessories

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/**thinkplus/warranty
  - **Onsite service upgrade options (in eligible locations)[7]**
  - **Post warranty maintenance services**
- **24 hour x 7 day[14] toll-free support during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information
US models announced December 18, 2007

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ThinkStation® S10 (6423) - TopSeller (April 2008)

Name	Type-model	Slot x bay	Processor	GHz	Cores	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Preload	Workhorse Global	Avail date
S10	6423-33U	5x6	E6850	3.00	2	2GB	1 x 250GB[2] SATA		DVD±RW	1 x NVS290			Pending	XP Pro	No	Apr 08
S10	6423-34U	5x6	E6850	3.00	2	2GB	1 x 250GB SATA		DVD±RW	1 x FX370			Pending	XP Pro	No	Apr 08
S10	6423-35U	5x6	E6850	3.00	2	2GB	1 x 250GB SATA		DVD±RW	1 x FX1700			Pending	XP Pro	No	Apr 08
S10	6423-36U	5x6	QX6850	3.00	4	2GB	1 x 250GB SATA		DVD±RW	1 x FX4600			Pending	XP Pro	No	Apr 08
S10	6423-37U	5x6	E6850	3.00	2	2GB	1 x 250GB SATA		BD burner	1 x FX1700			Pending	XP Pro	No	Apr 08
S10	6423-38U	5x6	QX6850	3.00	4	2GB	1 x 250GB SATA		BD burner	1 x FX4600			Pending	XP Pro	No	Apr 08
S10	6423-49U	5x6	E6750	2.66	2	2GB	1 x 250GB SATA		DVD±RW	1 x FX370	1394		Pending	Bus32	No	Apr 08
S10	6423-51U	5x6	E6850	3.00	2	2GB	2 x 250GB SATA		DVD±RW	1 x FX1700			Pending	Bus32	No	Apr 08
S10	6423-52U	5x6	E6850	3.00	2	2GB	1 x 146GB SAS		DVD±RW	1 x FX1700			Pending	Bus32	No	Apr 08
S10	6423-53U	5x6	E6850	3.00	2	2GB	2 x 250GB SATA		DVD±RW	1 x FX1700		X-Fi	Pending	Bus32	No	Apr 08
S10	6423-54U	5x6	Q6600	2.40	4	2GB	2 x 250GB SATA		DVD±RW	1 x FX1700		X-Fi	Pending	Bus32	No	Apr 08
S10	6423-55U	5x6	Q6700	2.66	4	2GB	2 x 160GB SATA	1	DVD±RW	2 x NVS290			Pending	Bus32	No	Apr 08

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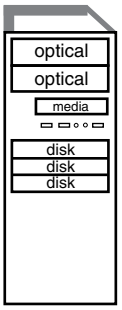
Processor	**Intel® Core™ 2 Duo Processor E6750** or **E6850** with **dual-core**, 1333MHz system bus, and 4MB L2 cache or **Intel Core 2 Quad Processor Q6600** or **Q6700** with **quad-core**, 1066MHz system bus, and 8MB L2 cache or **Intel Core 2 Extreme Processor QX6850** with **quad-core**, 1333MHz system bus, and 8MB L2 cache
Implementation	Processor uses FC-LGA6 package, one LGA775 socket
Memory	**2GB** std, 8GB max, **PC3-8500 1066MHz DDR3**, **ECC**, dual-channel capable, four 240-pin DIMM sockets; *Non-italics:* standard memory in two sockets; two sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76 to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® NVS 290**, PCIe x16 adapter, 256MB, two single-link DVI-I via DMS-59 dongle, 21W *Some:* **NVIDIA Quadro FX 370**, PCIe x16 adapter, 256MB, one single-link and 1 dual-link DVI, dual DVI-I or dual VGA, 25W *Some:* **NVIDIA Quadro FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W *Some:* **NVIDIA Quadro FX 4600**, PCIe x16 adapter, 768MB, two slot width, 2 dual-link DVI, dual DVI-I or dual VGA, 134W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **160GB** or **250GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in ICH9R
SATA connectors	Six SATA connectors on planar
SATA DVD±RW	*Some:* Super Multi-Burner DL DVD±RW SATA 1.5Gb/s
SATA BD burner	*Some:* Blu-ray™ Burner / HD-DVD Player SATA 1.5Gb/s (43R1958)
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	*Some:* LSI™ LSISAS3041E-R PCIe x4 adapter, 4-port, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel X38 Express Chipset**, Intel I/O Controller Hub 9 RAID (ICH9R) for RAID 0, 1, 5 support, SMSC® SCH5027D Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), five analog audio ports (line-in, microphone-in, front-out, rear-out, center/sub-out), optical S/PDIF digital out
IEEE 1394 adptr	*Some:* FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear
Audio	High Definition (HD) Audio, Analog Devices AD1988A codec; *Some:* Creative Sound Blaster® X-Fi, PCI adapter, high-end sound adapter
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5754 and BCM5755, 2 x PCIe x1
Security chip	Integrated in ethernet controller BCM5755, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	650 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	3 to 5 fans (power supply, CPU, rear, opt front PCI [>75W graphics], opt front [SAS])
Rack mount	Rack shelf support

Tower



- Raven black color; metal case
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- 175mm W x 483mm D x 426mm H
- 36 lb (16.4kg) max configuration
- 31-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support

Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 3.5", 1" high, external, std media reader
Bay ④ 3.5", 1" high, internal, std disk
Bay ⑤ 3.5", 1" high, internal, std or opt disk
Bay ⑥ 3.5", 1" high, internal, std or opt disk

Slot 1: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 5: half-length, full-height, 32-bit PCI 2.3

Security

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Chassis intrusion switch
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
Pending: ENERGY STAR® 4.0-compliant

Preloaded operating system[20]
- Microsoft® Windows® XP Professional
- Microsoft® Windows® Vista® Business Edition (32-bit)

✧ *Vista models:* Vista Premium logo

Preloaded applications[5] (all OSes; only some listed)
- Rescue and Recovery™
- ThinkVantage Productivity Center
- ThinkVantage System Update
- Norton Internet Security™ (90 days of virus definitions)
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW)

Accessories

1GB PC3-8500 DDR3 ECC UDIMM	41U5251
2GB PC3-8500 DDR3 ECC UDIMM	41U5252
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
Super Multi-Burner DL DVD±RW SATA 1.5Gb/s	41N5620
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L2240p Wide 22" Monitor	4422HB6
ThinkVision L2440p Wide 24" Monitor	4420HB2
NVIDIA® Quadro® 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768
NVIDIA Quadro 768MB FX 4600	43R1769

Other accessories at **lenovo.com**/accessories

Limited Warranty[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/**thinkplus/warranty
  - **Onsite service upgrade options (in eligible locations)[7]**
- **24 hour x 7 day[14] toll-free support during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information
US models announced April 15, 2008

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ThinkStation® S10 (6423) - TopSeller (August 2008)

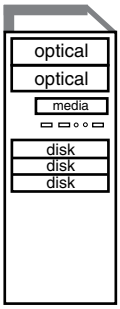
	Name	Type-model	Slot x bay	Processor	GHz	Cores	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Preload	Workhorse Global	Avail date
	S10	6423-56U	5x6	Q9550	2.83	4	2GB	2 x 250GB[2] SATA	None	DVD±RW	1 x FX3700		None	Pending	Bus32	No	Aug 08
	S10	6423-57U	5x6	Q9450	2.66	4	2GB	1 x 250GB SATA	None	DVD±RW	1 x FX570		None	Pending	Bus32	No	Aug 08
	S10	6423-58U	5x6	E8200	2.66	2	2GB	1 x 250GB SATA	None	DVD±RW	1 x NVS290	1394	None	Pending	Bus64	No	Aug 08
	S10	6423-59U	5x6	E8400	3.00	2	2GB	1 x 250GB SATA	None	DVD±RW	1 x FX370		None	Pending	Bus64	No	Aug 08
	S10	6423-61U	5x6	E8500	3.16	2	*4GB*	1 x 146GB SAS	None	DVD±RW	1 x FX1700		None	Pending	Bus64	No	Aug 08
	S10	6423-67U	5x6	Q9450	2.66	4	2GB	1 x 250GB SATA	None	DVD±RW	1 x FX570		None	Pending	Bus64	No	Aug 08
	S10	6423-68U	5x6	Q9450	2.66	4	4GB	1 x 250GB SATA	None	DVD±RW	1 x FX1700		None	Pending	Bus64	No	Aug 08
	S10	6423-69U	5x6	Q9550	2.83	4	4GB	1 x 500GB SATA	None	DVD±RW	1 x FX3700		None	Pending	Bus64	No	Aug 08
	S10	6423-72U	5x6	QX9650	3.00	4	4GB	1 x 500GB SATA	None	DVD±RW	1 x FX3700		None	Pending	Bus64	No	Aug 08
☞	**S10**	6423-H1U	5x6	Q9550	2.83	4	4GB	1 x 500GB SATA	None	DVD±RW	None		None	Pending	Bus64	No	Sep 08
☞	**S10**	6423-H2U	5x6	E8400	3.00	2	2GB	1 x 250GB SATA	None	DVD±RW	None		None	Pending	Bus64	No	Sep 08
☞	**S10**	6423-H3U	5x6	Q9550	2.83	4	4GB	1 x 146GB SAS	None	DVD±RW	None		None	Pending	Bus64	No	Sep 08
☞	**S10**	6423-H4U	5x6	E8400	3.00	2	2GB	1 x 146GB SAS	None	DVD±RW	None		None	Pending	Bus64	No	Sep 08

- ***These small and medium business (SMB) models are part of the US TopSeller™ Program***

Processor	**Intel® Core™ 2 Duo Processor E8200, E8400,** or **E8500** with **dual-core**, 1333MHz system bus, and 6MB L2 cache or **Intel Core 2 Quad Processor Q9450** or **Q9550** with **quad-core**, 1333MHz system bus, and 12MB L2 cache or **Intel Core 2 Extreme Processor QX9650** with **quad-core**, 1333MHz system bus, and 12MB L2 cache
Implementation	Processor uses FC-LGA6 package, one LGA775 socket
Memory	**2GB** or **4GB** std, 8GB max, **PC3-8500 1066MHz DDR3**, **ECC**, dual-channel capable, four 240-pin DIMM sockets; *Italics:* standard memory in four sockets; no sockets available *Non-italics:* standard memory in two sockets; two sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76W to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® NVS 290**, PCIe x16 adapter, 256MB, two single-link DVI-I via DMS-59 dongle, 21W *Some:* **NVIDIA Quadro FX 370**, PCIe x16 adapter, 256MB, one single-link and 1 dual-link DVI, dual DVI-I or dual VGA, 25W *Some:* **NVIDIA Quadro FX 570**, PCIe 2.0 x16 adapter, 256MB, two dual-link DVI, dual DVI-I or dual VGA, 38W *Some:* **NVIDIA Quadro FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W *Some:* **NVIDIA Quadro FX 3700**, PCIe 2.0 x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, 78W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **250GB** or **500GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in ICH9R
SATA connectors	Six SATA connectors on planar
SATA DVD±RW	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	*Some:* LSI™ LSISAS3041E-R PCIe x4 adapter, 4-port, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel X38 Express Chipset**, Intel I/O Controller Hub 9 RAID (ICH9R) for RAID 0, 1, 5 support, SMSC® SCH5027D Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), five analog audio ports (line-in, microphone-in, front-out, rear-out, center/sub-out), optical S/PDIF digital out
IEEE 1394 adptr	*Some:* FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear
Audio	High Definition (HD) Audio, Analog Devices AD1988A codec;
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5754 and BCM5755, 2 x PCIe x1
Security chip	Integrated in ethernet controller BCM5755, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	650 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	3 to 5 fans (power supply, CPU, rear, opt front PCI [>75W graphics], opt front [SAS])
Rack mount	Rack shelf support

Tower

- Raven black color; metal case
- 6.9"W x 19.0"D x 16.8"H (without handle)
- 175mm W x 483mm D x 426mm H
- 36 lb (16.4kg) max configuration
- 31-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support



Bay ①	5.25",	1.6" high,	external, std optical
Bay ②	5.25",	1.6" high,	external, open
Bay ③	3.5",	1" high,	external, std media reader
Bay ④	3.5",	1" high,	internal, std disk
Bay ⑤	3.5",	1" high,	internal, std or opt disk
Bay ⑥	3.5",	1" high,	internal, std or opt disk

Slot 1: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 5: half-length, full-height, 32-bit PCI 2.3

Security

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Chassis intrusion switch
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
Pending: ENERGY STAR® 4.0-compliant

Preloaded operating system[20]
- Microsoft® Windows® Vista® Business Edition (32-bit)
- Microsoft Windows Vista Business Edition (64-bit)

✧ *Vista models:* Vista Premium logo

Preloaded applications[5] (all OSes; only some listed)
- Rescue and Recovery™
- ThinkVantage Productivity Center
- ThinkVantage System Update
- Norton Internet Security™
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW)

Accessories

1GB PC3-8500 DDR3 ECC UDIMM	41U5251
2GB PC3-8500 DDR3 ECC UDIMM	41U5252
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
Super Multi-Burner DL DVD±RW SATA 1.5Gb/s	41N5620
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L2240p Wide 22" Monitor	4422HB6
ThinkVision L2440p Wide 24" Monitor	4420HB2
NVIDIA® Quadro® 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768
NVIDIA Quadro 768MB FX 4600	43R1769

Other accessories at **lenovo.com**/accessories

Limited Warranty[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/**thinkplus/warranty
  - **Onsite service upgrade options (in eligible locations)[7]**
- **24 hour x 7 day[14] toll-free support during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information

☞ US models announced September 30, 2008; previous models on August 19, 2008

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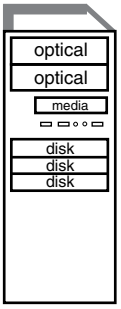
ThinkStation® S10 (6483)

Name	Type-model	Slot x bay	Processor	GHz	Cores	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Vista preload	Workhorse Global	Avail date
S10	6483-22U	5x6	Q6700	2.66	4	2GB	1 x 250GB[2] SATA		DVD±RW	1 x FX4600			ES40	Bus64	No	Jan 08
S10	6483-23U	5x6	E6850	3.00	2	2GB	1 x 146GB SAS		DVD±RW	1 x FX4600				Bus64	No	Jan 08
S10	6483-24U	5x6	QX6850	3.00	4	2GB	1 x 146GB SAS		DVD±RW	1 x FX4600	1394	X-Fi	ES40	Bus64	No	Jan 08
S10	6483-33U	5x6	QX6850	3.00	4	*4GB*	1 x 146GB SAS		DVD±RW	1 x FX4600	1394	X-Fi	ES40	Bus64	No	Jan 08
S10	6483-25U	5x6	Q6700	2.66	4	2GB	2 x 250GB SATA		DVD±RW	1 x FX1700			ES40	Bus64	No	Jan 08
S10	6483-26U	5x6	E6850	3.00	2	2GB	2 x 250GB SATA		DVD±RW	1 x FX1700			ES40	Bus64	No	Jan 08
S10	6483-27U	5x6	Q6600	2.40	4	2GB	1 x 146GB SAS		DVD±RW	1 x FX1700			ES40	Bus64	No	Jan 08
S10	6483-29U	5x6	Q6700	2.66	4	*4GB*	2 x 250GB SATA		DVD±RW	1 x FX1700			ES40	Bus64	No	Jan 08
S10	6483-31U	5x6	E6850	3.00	2	2GB	2 x 250GB SATA	1	DVD±RW	1 x FX1700			ES40	Bus64	No	Jan 08
S10	6483-32U	5x6	E6850	3.00	2	2GB	3 x 250GB SATA	5	DVD±RW	1 x FX1700			ES40	Bus64	No	Jan 08
S10	6483-19U	5x6	E6850	3.00	2	2GB	1 x 250GB SATA		DVD±RW	1 x FX1700			ES40	Bus64	No	Jan 08
S10	6483-21U	5x6	QX6800	2.93	4	*4GB*	2 x 500GB SATA	0	BD burner	2 x FX4600		X-Fi	ES40	Bus64	No	Jan 08

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***

Processor	**Intel® Core™ 2 Duo Processor E6850** with **dual-core**, 1333MHz system bus, and 4MB L2 cache or **Intel Core 2 Quad Processor Q6600** or **Q6700** with **quad-core**, 1066MHz system bus, and 8MB L2 cache or **Intel Core 2 Extreme Processor QX6800** with **quad-core**, 1066MHz system bus, and 8MB L2 cache or **Intel Core 2 Extreme Processor QX6850** with **quad-core**, 1333MHz system bus, and 8MB L2 cache
Implementation	Processor uses FC-LGA6 package, one LGA775 socket
Memory	**2GB** or **4GB** std, 8GB max, **PC3-8500 1066MHz DDR3, ECC**, dual-channel capable, four 240-pin DIMM sockets; *Italics:* standard memory in four sockets; no sockets available *Non-italics:* standard memory in two sockets; two sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76 to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W *Some:* **NVIDIA Quadro FX 4600**, PCIe x16 adapter, 768MB, two slot width, 2 dual-link DVI, dual DVI-I or dual VGA, 134W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **250GB** or **500GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in ICH9R
SATA connectors	Six SATA connectors on planar
SATA DVD±RW	*Some:* Super Multi-Burner DL DVD±RW SATA 1.5Gb/s
SATA BD burner	*Some:* Blu-ray™ Burner / HD-DVD Player SATA 1.5Gb/s
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	*Some:* LSI™ LSISAS3041E-R PCIe x4 adapter, 4-port, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel X38 Express Chipset**, Intel I/O Controller Hub 9 RAID (ICH9R) for RAID 0, 1, 5 support, SMSC® SCH5027D Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), five analog audio ports (line-in, microphone-in, front-out, rear-out, center/sub-out), optical S/PDIF digital out
IEEE 1394 adptr	*Some:* FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear
Audio	High Definition (HD) Audio, Analog Devices AD1988A codec; *Some:* Creative Sound Blaster® X-Fi, PCI adapter, high-end sound adapter
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5754 and BCM5755, 2 x PCIe x1
Security chip	Integrated in ethernet controller BCM5755, TCG 1.2-compliant
Keyboard	*Model 21U:* Lenovo USB Fingerprint Keyboard (USB connector), black *Others:* Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	650 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	3 to 5 fans (power supply, CPU, rear, opt front PCI [>75W graphics], opt front [SAS])
Rack mount	Rack shelf support

Tower



- Raven black color; metal case
- 6.9"W x 19.0"D x 16.8"H (without handle)
- 175mm W x 483mm D x 426mm H
- 36 lb (16.4kg) max configuration
- 31-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support

Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 3.5", 1" high, external, std media reader
Bay ④ 3.5", 1" high, internal, std disk
Bay ⑤ 3.5", 1" high, internal, std or opt disk
Bay ⑥ 3.5", 1" high, internal, std or opt disk

Slot 1: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 5: half-length, full-height, 32-bit PCI 2.3

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Chassis intrusion switch
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
Some: ENERGY STAR 4.0-compliant

Preloaded operating system[20]
- Microsoft® Windows® Vista® Business Edition (64-bit)
✧ Vista Premium logo

Preloaded applications[5] (only some listed)
- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Fingerprint Software (fingerprint keyboard model)
- System Migration Assistant
- Norton Internet Security™
- PC-Doctor™ (diagnostics)
- Microsoft Office 2007 Trial (60-day)
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW, Blu-ray)
- Ulead® DVD MovieFactory (Blu-ray)

Accessories

1GB PC3-8500 DDR3 ECC UDIMM	41U5251
2GB PC3-8500 DDR3 ECC UDIMM	41U5252
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
Super Multi-Burner DL DVD±RW SATA 1.5Gb/s	41N5620
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
USB 2.0 Lenovo Webcam	40Y8519
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L2240p Wide 22" Monitor	4422HB6
ThinkVision L2440x Wide 24" Monitor	4421HB2
Wireless Kbd & Opt Wheel Mouse (via USB)	73P4067
Laser Tilt Wheel Mouse (USB, PS/2)	41U3074
NVIDIA® Quadro® 512MB FX 570	45J7917
NVIDIA Quadro 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768

Other accessories at **lenovo.com**/accessories

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/**thinkplus/warranty
  - **Onsite service upgrade options (in eligible locations)**[7]
  - **Post warranty maintenance services**
- **24 hour x 7 day**[14] **toll-free support during the warranty period**[1] **via 800-426-7378**

See footnotes for important warranty information
US models announced December 18, 2007

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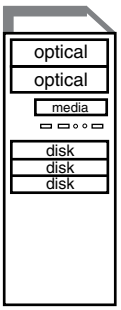
ThinkStation® S10 (6483) - April 2008

Name	Type-model	Slot x bay	Processor	GHz	Cores	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Preload	Workhorse Global	Avail date
S10	6483-34U	5x6	E6850	3.00	2	2GB	1 x 250GB[2] SATA		DVD±RW	1 x NVS290	None	None	Pending	XP Pro	No	Apr 08
S10	6483-35U	5x6	E6850	3.00	2	2GB	1 x 250GB SATA		DVD±RW	1 x FX370	None	None	Pending	XP Pro	No	Apr 08
S10	6483-36U	5x6	E6850	3.00	2	2GB	1 x 250GB SATA		DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
S10	6483-37U	5x6	QX6850	3.00	4	2GB	1 x 250GB SATA		DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
S10	6483-38U	5x6	QX6850	3.00	4	2GB	1 x 250GB SATA		DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
S10	6483-39U	5x6	E6850	3.00	2	2GB	1 x 146GB SAS		DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
S10	6483-41U	5x6	QX6850	3.00	4	2GB	1 x 146GB SAS		DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
S10	6483-42U	5x6	QX6850	3.00	4	2GB	1 x 146GB SAS		DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
S10	6483-43U	5x6	E6850	3.00	2	2GB	2 x 250GB SATA	1	DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
S10	6483-44U	5x6	QX6850	3.00	4	2GB	2 x 250GB SATA	1	DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
S10	6483-45U	5x6	QX6850	3.00	4	2GB	2 x 250GB SATA	1	DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
S10	6483-46U	5x6	E6850	3.00	2	2GB	1 x 250GB SATA		BD burner	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
S10	6483-47U	5x6	QX6850	3.00	4	2GB	1 x 250GB SATA		BD burner	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
S10	6483-92U	5x6	E6850	3.00	2	2GB	1 x 250GB SATA		DVD±RW	1 x FX1700	None	None	Pending	Bus32	No	Apr 08
S10	6483-93U	5x6	Q6700	2.66	4	2GB	1 x 250GB SATA		DVD±RW	1 x FX4600	None	None	Pending	Bus32	No	Apr 08
S10	6483-94U	5x6	E6850	3.00	2	2GB	2 x 250GB SATA		DVD±RW	1 x FX1700	None	None	Pending	Bus32	No	Apr 08
S10	6483-95U	5x6	E6850	3.00	2	2GB	2 x 250GB SATA	1	DVD±RW	1 x FX1700	None	None	Pending	Bus32	No	Apr 08
S10	6483-96U	5x6	E6850	3.00	2	2GB	3 x 250GB SATA	5	DVD±RW	1 x FX1700	None	None	Pending	Bus32	No	Apr 08

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***

Processor	**Intel® Core™ 2 Duo Processor E6850** with **dual-core**, 1333MHz system bus, and 4MB L2 cache or **Intel Core 2 Quad Processor Q6700** with **quad-core**, 1066MHz system bus, and 8MB L2 cache or **Intel Core 2 Extreme Processor QX6850** with **quad-core**, 1333MHz system bus, and 8MB L2 cache
Implementation	Processor uses FC-LGA6 package, one LGA775 socket
Memory	**2GB** std, 8GB max, **PC3-8500 1066MHz DDR3**, **ECC**, dual-channel capable, four 240-pin DIMM sockets; *Non-italics:* standard memory in two sockets; two sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76 to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® NVS 290**, PCIe x16 adapter, 256MB, two single-link DVI-I via DMS-59 dongle, 21W *Some:* **NVIDIA Quadro FX 370**, PCIe x16 adapter, 256MB, one single-link and 1 dual-link DVI, dual DVI-I or dual VGA, 25W *Some:* **NVIDIA Quadro FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W *Some:* **NVIDIA Quadro FX 4600**, PCIe x16 adapter, 768MB, two slot width, 2 dual-link DVI, dual DVI-I or dual VGA, 134W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **250GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in ICH9R
SATA connectors	Six SATA connectors on planar
SATA DVD±RW	*Some:* Super Multi-Burner DL DVD±RW SATA 1.5Gb/s
SATA BD burner	*Some:* Blu-ray™ Burner / HD-DVD Player SATA 1.5Gb/s
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	*Some:* LSI™ LSISAS3041E-R PCIe x4 adapter, 4-port, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel X38 Express Chipset**, Intel I/O Controller Hub 9 RAID (ICH9R) for RAID 0, 1, 5 support, SMSC® SCH5027D Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), five analog audio ports (line-in, microphone-in, front-out, rear-out, center/sub-out), optical S/PDIF digital out
IEEE 1394 adptr	None
Audio	High Definition (HD) Audio, Analog Devices AD1988A codec;
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5754 and BCM5755, 2 x PCIe x1
Security chip	Integrated in ethernet controller BCM5755, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	650 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	3 to 5 fans (power supply, CPU, rear, opt front PCI [>75W graphics], opt front [SAS])
Rack mount	Rack shelf support

Tower



- Raven black color; metal case
- 6.9"W x 19.0"D x 16.8"H (without handle)
- 175mm W x 483mm D x 426mm H
- 36 lb (16.4kg) max configuration
- 31-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support

Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 3.5", 1" high, external, std media reader
Bay ④ 3.5", 1" high, internal, std disk
Bay ⑤ 3.5", 1" high, internal, std or opt disk
Bay ⑥ 3.5", 1" high, internal, std or opt disk

Slot 1: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 5: half-length, full-height, 32-bit PCI 2.3

Security

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Chassis intrusion switch
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
Pending: ENERGY STAR 4.0-compliant

Preloaded operating system[20]
- Microsoft® Windows® XP Professional
- Microsoft Windows Vista® Business Edition (32-bit)

✧ *Vista models:* Vista Premium logo

Preloaded applications[5] (all OSes; only some listed)
- Rescue and Recovery™
- ThinkVantage System Update
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW, Blu-ray)
- Ulead® DVD MovieFactory (Blu-ray)

Accessories

1GB PC3-8500 DDR3 ECC UDIMM	41U5251
2GB PC3-8500 DDR3 ECC UDIMM	41U5252
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L2440p Wide 24" Monitor	4420HB2
NVIDIA® Quadro® 512MB FX 570	45J7917
NVIDIA Quadro 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768

Other accessories at **lenovo.com**/accessories

Limited Warranty[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com**/thinkplus/warranty
- **24 hour x 7 day[14] toll-free support during the warranty period**[1]

See footnotes for important warranty information
US models announced April 15, 2008

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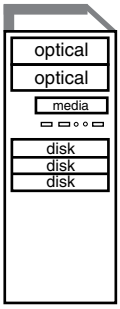
Name	Type-model	Slot x bay	Processor	GHz	Cores	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Preload	Workhorse Global	Avail date
S10	6483-A1U	5x6	Q9450	2.66	4	2GB	1 x 250GB SATA	None	DVD±RW	1 x FX3700		None	Pending	Bus64	No	Aug 08
S10	6483-A2U	5x6	Q9450	2.66	4	2GB	1 x 250GB SATA	None	DVD±RW	1 x FX570		None	Pending	Bus64	No	Aug 08
S10	6483-A3U	5x6	Q9550	2.83	4	2GB	1 x 250GB SATA	None	DVD±RW	1 x FX570		None	Pending	Bus64	No	Aug 08
S10	6483-A4U	5x6	Q9550	2.83	4	2GB	1 x 250GB SATA	None	DVD±RW	1 x FX3700		None	Pending	Bus64	No	Aug 08
S10	6483-B2U	5x6	Q9450	2.66	4	*4GB*	1 x 146GB SAS	None	DVD±RW	1 x FX1700	1394	None	Pending	Bus64	No	Aug 08
S10	6483-B3U	5x6	Q9550	2.83	4	*4GB*	2 x 250GB SATA	None	DVD±RW	1 x FX1700		None	Pending	Bus64	No	Aug 08
S10	6483-B4U	5x6	Q9550	2.83	4	*4GB*	1 x 146GB SAS	None	DVD±RW	1 x FX3700		None	Pending	Bus64	No	Aug 08
S10	6483-B5U	5x6	QX9650	3.00	4	*4GB*	2 x 250GB SATA	None	DVD±RW	1 x FX1700		None	Pending	Bus64	No	Aug 08
S10	6483-B8U	5x6	E8200	2.66	2	2GB	1 x 160GB SATA	None	DVD	1 x FX570	1394	None	Pending	Bus64	No	Aug 08
S10	6483-B9U	5x6	E8200	2.66	2	2GB	1 x 160GB SATA	None	DVD	1 x FX3700	1394	None	Pending	Bus64	No	Aug 08
S10	6483-C1U	5x6	E8400	3.00	2	2GB	2 x 250GB SATA	None	DVD±RW	1 x FX1700		None	Pending	Bus64	No	Aug 08
S10	6483-C2U	5x6	E8500	3.16	2	4GB	2 x 250GB SATA	None	DVD±RW	1 x FX3700		None	Pending	Bus64	No	Aug 08
S10	6483-E1U	5x6	QX9650	3.00	4	4GB	2 x 500GB SATA	None	DVD±RW	1 x FX1700		None	Pending	Bus64	No	Aug 08
S10	6483-E2U	5x6	QX9650	3.00	4	4GB	2 x 500GB SATA	None	DVD±RW	1 x FX3700		None	Pending	Bus64	No	Aug 08

Processor	**Intel® Core™ 2 Duo Processor E8200**, **E8400**, or **E8500** with **dual-core**, 1333MHz system bus, and 6MB L2 cache or **Intel Core 2 Quad Processor Q9450** or **Q9550** with **quad-core**, 1333MHz system bus, and 12MB L2 cache or **Intel Core 2 Extreme Processor QX9650** with **quad-core**, 1333MHz system bus, and 12MB L2 cache
Implementation	Processor uses FC-LGA6 package, one LGA775 socket
Memory	**2GB** or **4GB** std, 8GB max, **PC3-8500 1066MHz DDR3**, **ECC**, dual-channel capable, four 240-pin DIMM sockets; *Italics:* standard memory in four sockets; no sockets available *Non-italics:* standard memory in two sockets; two sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76 to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® FX 570**, PCIe 2.0 x16 adapter, 256MB, two dual-link DVI, dual DVI-I or dual VGA, 38W *Some:* **NVIDIA Quadro FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W *Some:* **NVIDIA Quadro FX 3700**, PCIe 2.0 x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, 78W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **160GB**, **250GB**, or **500GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in ICH9R
SATA connectors	Six SATA connectors on planar
SATA DVD	*Some:* DVD-ROM DL SATA1.5Gb/s 16X-48X Max[4]
SATA DVD±RW	*Some:* Super Multi-Burner DL DVD±RW SATA 1.5Gb/s
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	*Some:* LSI™ LSISAS3041E-R PCIe x4 adapter, 4-port, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel X38 Express Chipset**, Intel I/O Controller Hub 9 RAID (ICH9R) for RAID 0, 1, 5 support, SMSC® SCH5027D Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), five analog audio ports (line-in, microphone-in, front-out, rear-out, center/sub-out), optical S/PDIF digital out
IEEE 1394 adptr	*Some:* FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear
Audio	High Definition (HD) Audio, Analog Devices AD1988A codec;
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5754 and BCM5755, 2 x PCIe x1
Security chip	Integrated in ethernet controller BCM5755, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	650 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	3 to 5 fans (power supply, CPU, rear, opt front PCI [>75W graphics], opt front [SAS])
Rack mount	Rack shelf support

Tower

- Raven black color; metal case
- 6.9"W x 19.0"D x 16.8"H (without handle)
- 175mm W x 483mm D x 426mm H
- 36 lb (16.4kg) max configuration
- 31-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support



Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 3.5", 1" high, external, std media reader
Bay ④ 3.5", 1" high, internal, std disk
Bay ⑤ 3.5", 1" high, internal, std or opt disk
Bay ⑥ 3.5", 1" high, internal, std or opt disk

Slot 1: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 5: half-length, full-height, 32-bit PCI 2.3

Security

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Chassis intrusion switch
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
Pending: ENERGY STAR® 4.0-compliant

Preloaded operating system[20]

- Microsoft® Windows® Vista® Business Edition (64-bit)

✧ *Vista models:* Vista Premium logo

Preloaded applications[5]

- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- ThinkVantage System Update
- System Migration Assistant
- Norton Internet Security™ (90 days of virus definitions)
- PC-Doctor™ (diagnostics)
- Adobe® Reader
- Microsoft Office 2007 Trial (60-day)
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW)

Accessories

1GB PC3-8500 DDR3 ECC UDIMM	41U5251
2GB PC3-8500 DDR3 ECC UDIMM	41U5252
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
146GB SAS 3.0Gb/s Disk (15000 rpm)	43R1993
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
Super Multi-Burner DL DVD±RW SATA 1.5Gb/s	41N5620
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L1940p Wide 19" Monitor	4424HB6
ThinkVision L2240p Wide 22" Monitor	4422HB6
ThinkVision L2440x Wide 24" Monitor	4421HB2
NVIDIA® Quadro® 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768
NVIDIA Quadro 768MB FX 4600	43R1769

Other accessories at **lenovo.com**/accessories

Limited Warranty[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/**thinkplus/warranty
  - **Onsite service upgrade options (in eligible locations)**[7]
- **24 hour x 7 day**[14] **toll-free support during the warranty period**[1] **via 800-426-7378**

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ThinkStation

Lenovo ThinkStation S20

Lenovo ThinkStation S20 (left)
Lenovo ThinkStation D20 (right)

Lenovo ThinkStation S20

Lenovo ThinkStation S20 (left)
Lenovo ThinkStation D20 (right)

Lenovo ThinkStation Graphics Card Option
NVIDIA Quadro FX 4800 (45K1674)

Lenovo ThinkStation S20
with Lenovo ThinkVision Monitor

ThinkStation® S20 (4105) - TopSeller

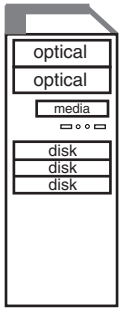
Name	Type-model	Slot x bay	Processor GHz	Memory DIMMs	Memory speed	Disk(s)	Disk size	RAID	SATA optical	Diskette or Media reader	Graphics adapter(s)	1394 adptr	ENERGY STAR 5.0	Preload	Avail date
S20	4105-11U	5x6	W3520 2.66	2 x 1GB	1066MHz	1 x 250GB[2]	3.5"		DVD±RW	Media	1 x FX380		Pending	Bus32	Mar 09
S20	4105-12U	5x6	E5504 2.00	2 x 1GB	800MHz	1 x 500GB	3.5"		DVD±RW	Media	1 x FX1800	1394	Pending	Bus32	Mar 09
S20	4105-13U	5x6	E5506 2.13	2 x 2GB	800MHz	1 x 500GB	3.5"		DVD±RW	Media	1 x FX1800	1394	Pending	Bus64	Mar 09
S20	4105-14U	5x6	E5540 2.53	2 x 2GB	1066MHz	2 x 500GB	3.5"	0	DVD±RW	Media	1 x FX4800		Pending	Bus64	Mar 09
S20	4105-15U	5x6	E5506 2.13	2 x 1GB	800MHz	1 x 150GB	2.5"		DVD±RW	Media	1 x FX1800	1394	Pending	Bus32	Mar 09
S20	4105-16U	5x6	W5580 3.20	2 x 2GB	1333MHz	2 x 300GB	2.5"	0	DVD±RW	Media	1 x FX4800		ES50	Bus64	Mar 09
S20	4105-38U	5x6	E5540 2.53	4 x 1GB	1066MHz	1 x 250GB	3.5"		DVD±RW	Media	1 x V5700		Pending	Bus64	Mar 09
S20	4105-39U	5x6	W3540 2.93	2 x 1GB	1066MHz	1 x 250GB	3.5"		DVD±RW	Media	1 x V3700		Pending	Bus32	Mar 09
S20	4105-41U	5x6	E5506 2.13	3 x 1GB	800MHz	1 x 250GB	3.5"		DVD±RW	Media	1 x FX1800		Pending	XP Pro 64	Mar 09

- ***These small and medium business (SMB) models are part of the US TopSeller™ Program***

Processor	**Intel® Xeon® processor W3520** or **W3540** with **quad-core**, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 1066MHz DDR3 memory controller, and 8MB cache or **Intel Xeon processor E5504** or **E5506** with **quad-core**, 4.8GT/s QPI, 800MHz DDR3 memory controller, and 4MB cache or **Intel Xeon processor E5540** with **quad-core**, 5.86GT/s QPI, 1066MHz DDR3 memory controller, and 8MB cache or **Intel Xeon processor W5580** with **quad-core**, 6.4GT/s QPI, 1333MHz DDR3 memory controller, and 8MB cache
Implementation	Processor uses FC-LGA8 package, one LGA1366 socket
Memory	**2GB**, **3GB**, or **4GB** std, 12GB max, **UDIMM**, **PC3-8500 1066MHz DDR3***** or **PC3-10600 1333MHz DDR3, ECC**, 3-channel capable, six 240-pin DIMM sockets *** System automatically clocks down for processors with 800MHz DDR3 memory controller
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * Adapters >75W use auxiliary power connector(s) from PSU *Some:* **NVIDIA® Quadro® FX 380**, PCIe x16 adapter, 256MB, two dual-link DVI-I, 35W *Some:* **NVIDIA Quadro FX 1800**, PCIe x16 adapter, 768MB, two DisplayPort, one dual-link DVI-I, 59W *Some:* **NVIDIA Quadro FX 4800**, PCIe x16 adapter, 1.5GB, two slot width, two DisplayPort, one dual-link DVI-I, 121W *Some:* **ATI™ FirePro™ V3700**, PCIe x16 adapter, 256MB, two dual-link DVI-I, 35W *Some:* **ATI FirePro V5700**, PCIe x16 adapter, 512MB, two DisplayPort, one dual-link DVI-I, 49W

Tower

- Raven black color; metal case
- 6.9"W x 19.0"D x 18.8"H (with handle)
- 175mm W x 483mm D x 478mm H
- 32 lb (14.5kg) in typical configuration
- 31-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support



Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 3.5", 1" high, external, std media reader
Bay ④ 3.5", 1" high, internal, std disk
Bay ⑤ 3.5", 1" high, internal, std or opt disk
Bay ⑥ 3.5", 1" high, internal, opt disk

Slot 1: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 2: full-length, full-height, PCIe 2.0 x4**
Slot 3: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 4: full-length, full-height, PCIe x1
Slot 5: full-length, full-height, 32-bit PCI 2.3

** x16 mechanical

Media reader	20-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **250GB** or **500GB**, SATA 3.0Gb/s, 7200 rpm, 3.5" *Some:* **150GB** or **300GB**, SATA 3.0Gb/s, 10000 rpm, 2.5"
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in ICH10R
SATA connectors	Three SATA connectors for disks, two SATA connectors for opticals
SATA DVD±RW	*Some:* Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive
Chipset	**Intel X58 Express Chipset**, Intel I/O Controller Hub 10 RAID (ICH10R) for RAID 0, 1, 5 support, Winbond® W83627DHG-P Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm)
Rear ports	Eight USB 2.0, eSATA, serial (9-pin), ethernet (RJ-45), six analog audio ports (line-in, mic-in, front-out, rear-out, center/sub-out, side-out), Optical SPDIF digital out, Optical SPDIF digital in
IEEE 1394 adptr	*Some:* FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear
Audio	High Definition (HD) Audio, Analog Devices AD1988A codec
Speaker	Internal speaker for business audio
Ethernet	One gigabit ethernet on planar, Broadcom® BCM5755
Security chip	Broadcom Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	625 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Bronze
Cooling	3 to 5 fans (power supply, CPU, rear, opt front PCI [>75W graphics], opt front [SAS])
Rack mount	Rack shelf support

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

GREENGUARD® certified
RoHS-compliant
Some: ENERGY STAR® 5.0-compliant
EPEAT™ Gold rating (only for ES5.0 models)

Preloaded operating system[20]

- Microsoft® Windows® XP Professional (64-bit)
- Microsoft Windows Vista® Business Edition (32-bit)
- Microsoft Windows Vista Business Edition (64-bit)

✧ Vista Premium logo

Preloaded applications[5] (all OSes; only some listed)

- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- Microsoft Office 2007 Trial (60-day)
- Corel® WinDVD® (DVD±RW)

Accessories

1GB PC3-8500 DDR3 ECC UDIMM	51J0503
2GB PC3-8500 DDR3 ECC UDIMM	51J0504
1GB PC3-10600 DDR3 ECC UDIMM	43R2032
2GB PC3-10600 DDR3 ECC UDIMM	43R2033
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
Blu-ray™ Burner SATA 1.5Gb/s	45K1675
ThinkVision® L2440p Wide 24" Monitor	4420HB2
Laser Tilt Wheel Mouse (USB)	41U3074
NVIDIA Quadro NVS 290	43R1765
NVIDIA Quadro FX 580	45K1671
ATI FirePro 1GB V7750	51J0511

Other accessories at **lenovo.com**/accessories

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/thinkplus/warranty**
  - **Onsite service upgrade options (in eligible locations)[7]**
  - **Post warranty maintenance services**
- **24 hour x 7 day[14] toll-free support during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information
US models announced March 31, 2009

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ThinkStation® S20 (4157)

Name	Type-model	Slot x bay	Processor	GHz	Memory DIMMs	Memory speed	Disk(s)	Disk size	RAID	SATA optical	Diskette or Media reader	Graphics adapter(s)	1394 adptr	ENERGY STAR 5.0	Preload	Avail date
S20	4157-11U	5x6	W3520	2.66	2 x 1GB	1066MHz	1 x 250GB[2]	3.5"		DVD±RW	Media	1 x FX380		Pending	Bus32	Mar 09
S20	4157-12U	5x6	W3520	2.66	2 x 1GB	1066MHz	1 x 500GB	3.5"		DVD±RW	Media	1 x FX580		Pending	Bus32	Mar 09
S20	4157-13U	5x6	E5502	1.86	2 x 2GB	800MHz	2 x 150GB	2.5"	1	DVD±RW	Media	1 x FX1800	1394	Pending	Bus64	Mar 09
S20	4157-14U	5x6	E5506	2.13	2 x 1GB	800MHz	2 x 250GB	3.5"		DVD±RW	Media	1 x FX380	1394	Pending	Bus32	Mar 09
S20	4157-15U	5x6	E5506	2.13	2 x 1GB	800MHz	1 x 250GB	3.5"		DVD±RW	Media	1 x NVS290	1394	Pending	Bus32	Mar 09
S20	4157-16U	5x6	E5506	2.13	2 x 2GB	800MHz	2 x 500GB	3.5"	0	DVD±RW	Media	1 x FX4800		Pending	Bus64	Mar 09
S20	4157-48U	5x6	W3540	2.93	2 x 1GB	1066MHz	1 x 250GB	3.5"		DVD	Media	1 x V3700		Pending	Bus32	Mar 09
S20	4157-49U	5x6	E5506	2.13	4 x 1GB	800MHz	1 x 250GB	3.5"		DVD	Media	1 x V5700		Pending	Bus64	Mar 09
S20	4157-51U	5x6	E5540	2.53	4 x 1GB	1066MHz	2 x 300GB	2.5"	0	DVD±RW	Media	1 x V7750		Pending	Bus64	Mar 09
S20	4157-52U	5x6	E5506	2.13	3 x 1GB	800MHz	1 x 250GB	3.5"		DVD±RW	Media	1 x FX1800		Pending	XP Pro 64	Mar 09

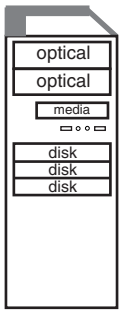
Processor	**Intel® Xeon® processor W3520** or **W3540** with **quad-core**, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 1066MHz DDR3 memory controller, and 8MB cache or **Intel Xeon processor E5502** with **dual-core**, 4.8GT/s QPI, 800MHz DDR3 memory controller, and 4MB cache or **Intel Xeon processor E5506** with **quad-core**, 4.8GT/s QPI, 800MHz DDR3 memory controller, and 4MB cache or **Intel Xeon processor E5540** with **quad-core**, 5.86GT/s QPI, 1066MHz DDR3 memory controller, and 8MB cache
Implementation	Processor uses FC-LGA8 package, one LGA1366 socket
Memory	**2GB**, **3GB**, or **4GB** std, 12GB max, **UDIMM**, **PC3-8500 1066MHz DDR3***** or **PC3-10600 1333MHz DDR3, ECC**, 3-channel capable, six 240-pin DIMM sockets *** System automatically clocks down for processors with 800MHz DDR3 memory controller
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * Adapters >75W use auxiliary power connector(s) from PSU *Some:* **NVIDIA® Quadro® NVS 290**, PCIe x16 adapter, 256MB, two single-link DVI via DMS-59 with dual DVI-I dongle, 21W *Some:* **NVIDIA Quadro FX 380**, PCIe x16 adapter, 256MB, two dual-link DVI-I, 35W *Some:* **NVIDIA Quadro FX 580**, PCIe x16 adapter, 512MB, two DisplayPort, one dual-link DVI-I, 40W *Some:* **NVIDIA Quadro FX 1800**, PCIe x16 adapter, 768MB, two DisplayPort, one dual-link DVI-I, 59W *Some:* **NVIDIA Quadro FX 4800**, PCIe x16 adapter, 1.5GB, two slot width, two DisplayPort, one dual-link DVI-I, 121W *Some:* **ATI™ FirePro™ V3700**, PCIe x16 adapter, 256MB, two dual-link DVI-I, 35W *Some:* **ATI FirePro V5700**, PCIe x16 adapter, 512MB, two DisplayPort, one dual-link DVI-I, 49W *Some:* **ATI FirePro V7750**, PCIe x16 adapter, 1GB, two DisplayPort, one dual-link DVI-I, 76W
Media reader	20-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **250GB** or **500GB**, SATA 3.0Gb/s, 7200 rpm, 3.5" *Some:* **150GB** or **300GB**, SATA 3.0Gb/s, 10000 rpm, 2.5"
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in ICH10R
SATA connectors	Three SATA connectors for disks, two SATA connectors for opticals
SATA DVD	*Some:* DVD-ROM DL SATA 1.5Gb/s 16X-48X Max[4] Drive
SATA DVD±RW	*Some:* Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive
Chipset	**Intel X58 Express Chipset**, Intel I/O Controller Hub 10 RAID (ICH10R) for RAID 0, 1, 5 support, Winbond® W83627DHG-P Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm)
Rear ports	Eight USB 2.0, eSATA, serial (9-pin), ethernet (RJ-45), six analog audio ports (line-in, mic-in, front-out, rear-out, center/sub-out, side-out), Optical SPDIF digital out, Optical SPDIF digital in
IEEE 1394 adptr	*Some:* FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear
Audio	High Definition (HD) Audio, Analog Devices AD1988A codec
Speaker	Internal speaker for business audio
Ethernet	One gigabit ethernet on planar, Broadcom® BCM5755
Security chip	Broadcom Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	625 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Bronze
Cooling	3 to 5 fans (power supply, CPU, rear, opt front PCI [>75W graphics], opt front [SAS])
Rack mount	Rack shelf support

Preloaded operating system[20]
- Microsoft® Windows® XP Professional (64-bit)
- Microsoft Windows Vista® Business Edition (32-bit)
- Microsoft Windows Vista Business Edition (64-bit)

✧ Vista Premium logo

Preloaded applications[5] (all OSes; only some listed)
- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- Microsoft Office 2007 Trial (60-day)
- Corel® WinDVD® (DVD, DVD±RW)

Tower



- Raven black color; metal case
- 6.9"W x 19.0"D x 18.8"H (with handle)
- 175mm W x 483mm D x 478mm H
- 32 lb (14.5kg) in typical configuration
- 31-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support

Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 3.5", 1" high, external, std media reader
Bay ④ 3.5", 1" high, internal, std disk
Bay ⑤ 3.5", 1" high, internal, std or opt disk
Bay ⑥ 3.5", 1" high, internal, opt disk

Slot 1: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 2: full-length, full-height, PCIe 2.0 x4**
Slot 3: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 4: full-length, full-height, PCIe x1
Slot 5: full-length, full-height, 32-bit PCI 2.3

** x16 mechanical

SECURITY
- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

GREENGUARD® certified
RoHS-compliant
Pending: ENERGY STAR® 5.0-compliant

LIMITED WARRANTY[1]
- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/**thinkplus/warranty
  - **Onsite service upgrade options (in eligible locations)[7]**
  - **Post warranty maintenance services**
- **24 hour x 7 day[14] toll-free support during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information
US models announced March 31, 2009

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ThinkStation

Lenovo ThinkStation D10

Lenovo ThinkStation S10 (left)
Lenovo ThinkStation D10 (right)

Lenovo ThinkStation D10

Lenovo ThinkStation D10

ThinkStation Rail Kit (43R1964)

Lenovo ThinkStation D10

ThinkStation® D10 (6427) - TopSeller

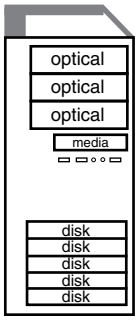
Name	Type-model	Slot x bay	Processor(s)	GHz	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Preload	Avail date
D10	6427-27U	7x9	1 x E5430	2.66	2 x 1GB	2 x 250GB SATA		DVD±RW	1 x FX1700	None			Bus64	Mar 08
D10	6427-28U	7x9	2 x E5430	2.66	4 x 1GB	2 x 250GB SATA		DVD±RW	1 x FX1700	None	X-Fi	ES40	Bus64	Mar 08
D10	6427-34U	7x9	2 x E5430	2.66	4 x 1GB	2 x 250GB SATA		DVD±RW, BD burner	1 x FX4600	None	X-Fi		Bus64	Mar 08
D10	6427-29U	7x9	2 x E5440	2.83	2 x 2GB	2 x 146GB SAS		DVD±RW	1 x FX1700	None	X-Fi	ES40	Bus64	Mar 08
D10	6427-31U	7x9	2 x E5430	2.66	4 x 1GB	2 x 250GB SATA		DVD±RW	1 x FX1700	None		ES40	Bus64	Mar 08
D10	6427-32U	7x9	2 x E5430	2.66	2 x 2GB	2 x 146GB SAS	1	DVD±RW	1 x FX1700	None		ES40	Bus64	Mar 08
D10	6427-33U	7x9	2 x E5430	2.66	2 x 1GB	2 x 250GB SATA	1	DVD±RW	2 x NVS290	None		ES40	Bus64	Mar 08
☞ **D10**	6427-73U	7x9	1 x E5430	2.66	2 x 1GB	1 x 250GB SATA		DVD±RW	1 x FX1700	None		Pending	XP Pro	Apr 08
☞ **D10**	6427-35U	7x9	1 x E5440	2.83	2 x 1GB	1 x 250GB SATA		DVD±RW	1 x FX1700	None		Pending	XP Pro	Apr 08
☞ **D10**	6427-36U	7x9	2 x E5430	2.66	2 x 1GB	1 x 250GB SATA		DVD±RW	1 x FX4600	None		Pending	XP Pro	Apr 08
☞ **D10**	6427-37U	7x9	2 x E5440	2.83	2 x 1GB	1 x 250GB SATA		DVD±RW	1 x FX4600	None		Pending	XP Pro	Apr 08

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***
- ***These small and medium business (SMB) models are part of the US TopSeller™ Program***

Processor(s)	One or two processors, **Intel® Xeon® processor E5430** or **E5440** with **quad-core**, 1333MHz system bus, and 12MB L2 cache
Implementation	Processor uses FC-LGA6 package, two LGA771 sockets
Memory	**2GB** or **4GB** std, 64GB max, **PC2-5300 667MHz DDR2**, **ECC**, fully buffered, 4-channel capable, eight 240-pin DIMM sockets; *Non-italics:* standard memory in two or four sockets; six or four sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76 to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® NVS 290**, PCIe x16 adapter, 256MB, two single-link DVI-I via DMS-59 dongle, 21W *Some:* **NVIDIA Quadro FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W *Some:* **NVIDIA Quadro FX 4600**, PCIe x16 adapter, 768MB, two slot width, 2 dual-link DVI, dual DVI-I or dual VGA, 134W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **250GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in 6321ESB
SATA connectors	Five SATA connectors on planar
SATA DVD±RW	*Some:* Super Multi-Burner DL DVD±RW SATA 1.5Gb/s
SATA BD burner	*Some:* Blu-ray™ Burner / HD-DVD Player SATA 1.5Gb/s
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	LSI™ LSISAS1068E chipset, 5 connectors, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel 5400A Chipset**, Intel 6321ESB I/O Controller Hub for RAID 0, 1, 5, 10 support, Winbond® W83627EHG Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Four USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), six analog audio ports (line-in, mic-in, front-out, side-out, rear-out, center/sub-out), RCA-type coaxial digital in, RCA-type coaxial digital out
IEEE 1394 adptr	None
Audio	High Definition (HD) Audio, Realtek® ALC888 codec; *Some:* Creative Sound Blaster® X-Fi, PCI adapter, high-end sound adapter
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Intel® 82563EB, proprietary Intel bus
Security chip	Winbond WPCT200 SafeKeeper™ Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1000 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	Five fans (power supply, first processor, second processor, rear, front disk)
Rack mount	Rack shelf support or optional sliding rack mount rail kit support

Tower

- Raven black color; metal case
- 8.3"W x 23.7"D x 17.1"H (without handle)
- 210mm W x 602mm D x 434mm H
- 65 lb (29.5kg) max configuration
- 49-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support or optional rail kit



Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 5.25", 1.6" high, external, open
Bay ④ 3.5", 1" high, external, std media reader
Bay ⑤ 3.5", 1" high, internal, std disk
Bay ⑥ 3.5", 1" high, internal, std disk
Bay ⑦ 3.5", 1" high, internal, std or opt disk
Bay ⑧ 3.5", 1" high, internal, std or opt disk
Bay ⑨ 3.5", 1" high, internal, opt disk

Slot 1: half-length, full-height, PCIe x4 (x8 mechanical)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, PCIe x4 (x8 mechanical)
Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 5: full-length, full-height, 64-bit PCI-X
Slot 6: full-length, full-height, 64-bit PCI-X
Slot 7: full-length, full-height, 32-bit PCI 2.3

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
Some: ENERGY STAR® 4.0-compliant

Preloaded operating system[20]
- Microsoft® Windows® XP Professional
- Microsoft Windows Vista® Business Edition (64-bit)

✧ *Vista models:* Vista Premium logo

Preloaded applications[5] (all OSes; only some listed)
- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- ThinkVantage System Update
- System Migration Assistant
- Norton Internet Security™ (90 days of virus definitions)
- PC-Doctor™ (diagnostics)
- Microsoft Office 2007 Trial (60-day)
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW, Blu-ray)
- Ulead® DVD MovieFactory (Blu-ray)

Accessories

Intel Xeon Quad-Core Processor E5430	43R2012
Intel Xeon Quad-Core Processor E5440	43R2013
2GB PC2-5300 DDR2 ECC FB-DIMM	43R1772
4GB PC2-5300 DDR2 ECC FB-DIMM	43R1773
500GB SATA 3.0Gb/s Disk (7200 rpm)	43R1990
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
146GB SAS 3.0Gb/s Disk (15000 rpm)	43R1993
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
ThinkStation Rail Kit	43R1964
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision L2440p Wide 24" Monitor	4420HB2
Laser Tilt Wheel Mouse (USB, PS/2)	41U3074
NVIDIA® Quadro® 512MB FX 570	45J7917
NVIDIA Quadro 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768

Other accessories at **lenovo.com**/accessories

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/**thinkplus/warranty
- **24x7[14] toll-free support for warranty issues during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information

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☞ US models announced April 15, 2008; previous models on March 11, 2008

ThinkStation® D10 (6427) - TopSeller (August 2008)

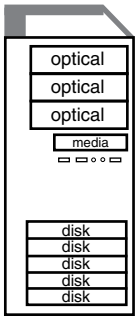
	Name	Type-model	Slot x bay	Processor(s)	GHz	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Preload	Avail date
	D10	6427-74U	7x9	2 x E5440	2.83	2 x 1GB	1 x 250GB SATA	None	DVD±RW	1 x FX3700	None	None	Pending	Bus64	Aug 08
	D10	6427-88U	7x9	1 x E5450	3.00	2 x 2GB	1 x 146GB SAS	None	DVD±RW	1 x FX3700	None	None	Pending	Bus64	Aug 08
	D10	6427-89U	7x9	2 x E5440	2.83	2 x 1GB	1 x 250GB SATA	None	DVD±RW	1 x FX570	None	None	Pending	Bus64	Aug 08
	D10	6427-91U	7x9	1 x E5450	3.00	2 x 2GB	1 x 146GB SAS	None	DVD±RW	1 x FX570	None	None	Pending	Bus64	Aug 08
☞	**D10**	6427-H5U	7x9	1 x E5440	2.83	2 x 2GB	1 x 500GB SATA	None	DVD±RW	None	None	None	Pending	Bus64	Sep 08
☞	**D10**	6427-H6U	7x9	1 x E5420	2.50	2 x 2GB	1 x 500GB SATA	None	DVD±RW	None	None	None	Pending	Bus64	Sep 08
☞	**D10**	6427-H7U	7x9	1 x E5440	2.83	4 x 2GB	1 x 146GB SAS	None	DVD±RW	None	None	None	Pending	Bus64	Sep 08
☞	**D10**	6427-H8U	7x9	1 x E5420	2.50	4 x 2GB	1 x 146GB SAS	None	DVD±RW	None	None	None	Pending	Bus64	Sep 08

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***
- ***These small and medium business (SMB) models are part of the US TopSeller™ Program***

Processor(s)	One or two processors, **Intel® Xeon® processor E5420**, **E5440**, or **E5450** with **quad-core**, 1333MHz system bus, and 12MB L2 cache
Implementation	Processor uses FC-LGA6 package, two LGA771 sockets
Memory	**2GB**, **4GB**, or **8GB** std, 64GB max, **PC2-5300 667MHz DDR2**, **ECC**, fully buffered, 4-channel capable, eight 240-pin DIMM sockets; *Non-italics:* standard memory in two or four sockets; six or four sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76W to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® FX 570**, PCIe 2.0 x16 adapter, 256MB, two dual-link DVI, dual DVI-I or dual VGA, 38W *Some:* **NVIDIA Quadro FX 3700**, PCIe 2.0 x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, 78W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **250GB** or **500GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in 6321ESB
SATA connectors	Five SATA connectors on planar
SATA DVD±RW	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	LSI™ LSISAS1068E chipset, 5 connectors, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel 5400A Chipset**, Intel 6321ESB I/O Controller Hub for RAID 0, 1, 5, 10 support, Winbond® W83627EHG Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Four USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), six analog audio ports (line-in, mic-in, front-out, side-out, rear-out, center/sub-out), RCA-type coaxial digital in, RCA-type coaxial digital out
IEEE 1394 adptr	None
Audio	High Definition (HD) Audio, Realtek® ALC888 codec;
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Intel® 82563EB, proprietary Intel bus
Security chip	Winbond WPCT200 SafeKeeper™ Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1000 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	Five fans (power supply, first processor, second processor, rear, front disk)
Rack mount	Rack shelf support or optional sliding rack mount rail kit support

Tower

- Raven black color; metal case
- 8.3"W x 23.7"D x 17.1"H (without handle)
- 210mm W x 602mm D x 434mm H
- 65 lb (29.5kg) max configuration
- 49-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support or optional rail kit



Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 5.25", 1.6" high, external, open
Bay ④ 3.5", 1" high, external, std media reader
Bay ⑤ 3.5", 1" high, internal, std disk
Bay ⑥ 3.5", 1" high, internal, std disk
Bay ⑦ 3.5", 1" high, internal, std or opt disk
Bay ⑧ 3.5", 1" high, internal, std or opt disk
Bay ⑨ 3.5", 1" high, internal, opt disk

Slot 1: half-length, full-height, PCIe x4 (x8 mechanical)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, PCIe x4 (x8 mechanical)
Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 5: full-length, full-height, 64-bit PCI-X
Slot 6: full-length, full-height, 64-bit PCI-X
Slot 7: full-length, full-height, 32-bit PCI 2.3

Preloaded operating system[20]

- Microsoft® Windows® Vista® Business Edition (64-bit)

✧ *Vista models:* Vista Premium logo

Preloaded applications[5]

- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- ThinkVantage System Update
- System Migration Assistant
- Norton Internet Security™ (90 days of virus definitions)
- PC-Doctor™ (diagnostics)
- Adobe® Reader
- Microsoft Office 2007 Trial (60-day)
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW)

Accessories

Intel Xeon Quad-Core Processor E5450	43R2014
2GB PC2-5300 DDR2 ECC FB-DIMM	43R1772
4GB PC2-5300 DDR2 ECC FB-DIMM	43R1773
500GB SATA 3.0Gb/s Disk (7200 rpm)	43R1990
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
146GB SAS 3.0Gb/s Disk (15000 rpm)	43R1993
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
Super Multi-Burner DL DVD±RW SATA1.5Gb/s	41N5620
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
ThinkStation Rail Kit	43R1964
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L1940p Wide 19" Monitor	4424HB6
ThinkVision L2240p Wide 22" Monitor	4422HB6
ThinkVision L2440x Wide 24" Monitor	4421HB2
Laser Tilt Wheel Mouse (USB, PS/2)	41U3074
Lenovo USB Fingerprint Keyboard	73P4730
NVIDIA® Quadro® 512MB FX 570	45J7917
NVIDIA Quadro 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768
NVIDIA Quadro 768MB FX 4600	43R1769

Other accessories at **lenovo.com**/accessories

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
Some: ENERGY STAR® 4.0-compliant

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/thinkplus/warranty**
- **24x7[14] toll-free support for warranty issues during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information

☞ US models announced September 30, 2008; previous models on August 19, 2008

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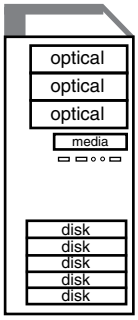
ThinkStation® D10 (6493)

Name	Type-model	Slot x bay	Processor(s)	GHz	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Vista preload	Workhorse Global	Avail date
D10	6493-19U	7x9	1 x E5430	2.66	2 x 1GB	2 x 250GB[2]	SATA	DVD±RW	1 x FX1700	None			Bus64	No	Mar 08
D10	6493-21U	7x9	1 x E5440	2.83	2 x 2GB	2 x 146GB	SAS	DVD±RW	1 x FX4600	None			Bus64	No	Mar 08
D10	6493-22U	7x9	2 x X5460	3.16	2 x 2GB	2 x 146GB	SAS	DVD±RW	1 x FX4600	None		ES40	Bus64	No	Mar 08
D10	6493-23U	7x9	1 x E5430	2.66	4 x 1GB	2 x 250GB	SATA	DVD±RW	1 x FX1700	None	X-Fi		Bus64	No	Mar 08
D10	6493-25U	7x9	1 x E5420	2.50	2 x 1GB	2 x 250GB	SATA	DVD±RW	1 x FX1700	None			Bus64	No	Mar 08
D10	6493-26U	7x9	2 x X5460	3.16	4 x 2GB	2 x 146GB	SAS	1 DVD±RW	1 x FX4600	None		ES40	Bus64	No	Mar 08
D10	6493-33U	7x9	2 x X5460	3.16	*8 x 2GB*	3 x 146GB	SAS	1E DVD±RW	1 x FX4600	None		ES40	Bus64	No	Mar 08
D10	6493-27U	7x9	2 x X5460	3.16	2 x 1GB	2 x 250GB	SATA	1 DVD±RW	2 x NVS290	None		ES40	Bus64	No	Mar 08
D10	6493-31U	7x9	2 x E5440	2.83	2 x 2GB	2 x 146GB	SAS	1 DVD±RW	1 x FX4600	None	X-Fi		Bus64	No	Mar 08
D10	6493-32U	7x9	2 x E5440	2.83	2 x 2GB	3 x 146GB	SAS	1E DVD±RW	1 x FX4600	None	X-Fi		Bus64	No	Mar 08
D10	6493-17U	7x9	2 x E5405	2.00	4 x 1GB	2 x 500GB	SATA	DVD±RW	1 x FX1700	None			Bus64	No	Mar 08
D10	6493-18U	7x9	2 x E5440	2.83	*8 x 2GB*	4 x 146GB	SAS	0 BD burner	2 x FX4600	None	X-Fi		Bus64	No	Mar 08

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***

Processor	One or two processors, **Intel® Xeon® processor E5405, E5420, E5430, E5440,** or **X5460** with **quad-core**, 1333MHz system bus, and 12MB L2 cache
Implementation	Processor uses FC-LGA6 package, two LGA771 sockets
Memory	**2GB**, **4GB**, **8GB** or **16GB** std, 64GB max, **PC2-5300 667MHz DDR2**, **ECC**, fully buffered, 4-channel capable, eight 240-pin DIMM sockets; *Italics:* standard memory in eight sockets; no sockets available *Non-italics:* standard memory in two or four sockets; six or four sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76 to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® NVS 290**, PCIe x16 adapter, 256MB, two single-link DVI-I via DMS-59 dongle, 21W *Some:* **NVIDIA Quadro FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W *Some:* **NVIDIA Quadro FX 4600**, PCIe x16 adapter, 768MB, two slot width, 2 dual-link DVI, dual DVI-I or dual VGA, 134W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **250GB** or **500GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in 6321ESB
SATA connectors	Five SATA connectors on planar
SATA DVD±RW	*Some:* Super Multi-Burner DL DVD±RW SATA 1.5Gb/s
SATA BD burner	*Some:* Blu-ray™ Burner, SATA 1.5Gb/s HD-DVD Player
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	LSI™ LSISAS1068E chipset, 5 connectors, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel 5400A Chipset**, Intel 6321ESB I/O Controller Hub for RAID 0, 1, 5, 10 support, Winbond® W83627EHG Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Four USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), six analog audio ports (line-in, mic-in, front-out, side-out, rear-out, center/sub-out), RCA-type coaxial digital in, RCA-type coaxial digital out
IEEE 1394 adptr	None
Audio	High Definition (HD) Audio, Realtek® ALC888 codec; *Some:* Creative Sound Blaster® X-Fi, PCI adapter, high-end sound adapter
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Intel® 82563EB, proprietary Intel bus
Security chip	Winbond WPCT200 SafeKeeper™ Trusted Platform Module, TCG 1.2-compliant
Keyboard	*Model 18U:* Lenovo USB Fingerprint Keyboard (USB connector), black Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1000 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	Five fans (power supply, first processor, second processor, rear, front disk)
Rack mount	Rack shelf support or optional sliding rack mount rail kit support

Tower



- Raven black color; metal case
- 8.3"W x 23.7"D x 17.1"H (without handle)
- 210mm W x 602mm D x 434mm H
- 65 lb (29.5kg) max configuration
- 49-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support or optional rail kit

Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 5.25", 1.6" high, external, open
Bay ④ 3.5", 1" high, external, std media reader
Bay ⑤ 3.5", 1" high, internal, std disk
Bay ⑥ 3.5", 1" high, internal, std disk
Bay ⑦ 3.5", 1" high, internal, std or opt disk
Bay ⑧ 3.5", 1" high, internal, std or opt disk
Bay ⑨ 3.5", 1" high, internal, opt disk

Slot 1: half-length, full-height, PCIe x4 (x8 mechanical)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, PCIe x4 (x8 mechanical)
Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 5: full-length, full-height, 64-bit PCI-X
Slot 6: full-length, full-height, 64-bit PCI-X
Slot 7: full-length, full-height, 32-bit PCI 2.3

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Preloaded operating system[20]
- Microsoft® Windows® Vista® Business Edition (64-bit)

✧ Vista Premium logo

Preloaded applications[5] (only some listed)
- Rescue and Recovery™
- ThinkVantage System Update
- ThinkVantage Fingerprint Software (fingerprint keyboard model)
- Norton Internet Security™ (90 days of virus definitions)
- PC-Doctor™ (diagnostics)
- Microsoft Office 2007 Trial (60-day)
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW, Blu-ray)
- Ulead® DVD MovieFactory (Blu-ray)

Accessories

Intel Xeon Quad-Core Processor E5420	43R2011
Intel Xeon Quad-Core Processor E5430	43R2012
Intel Xeon Quad-Core Processor E5440	43R2013
2GB PC2-5300 DDR2 ECC FB-DIMM	43R1772
4GB PC2-5300 DDR2 ECC FB-DIMM	43R1773
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
146GB SAS 3.0Gb/s Disk (15000 rpm)	43R1993
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
ThinkStation Rail Kit	43R1964
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L2440p Wide 24" Monitor	4420HB2
NVIDIA® Quadro® 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768

Other accessories at **lenovo.com**/accessories

Supports ThinkVantage® technologies

RoHS-compliant
Some: ENERGY STAR® 4.0-compliant

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/thinkplus/warranty**
  - **Onsite service upgrade options (in eligible locations)[7]**
- **24x7[14] toll-free support for warranty issues during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information
US models announced March 11, 2008

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(BARC1-4) March 2008

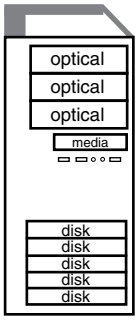
ThinkStation® D10 (6493) - April 2008

Name	Type-model	Slot x bay	Processor(s)	GHz	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Vista preload	Workhorse Global	Avail date
D10	6493-34U	7x9	1 x E5430	2.66	2 x 1GB	1 x 250GB[2] SATA		DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
D10	6493-39U	7x9	1 x E5430	2.66	2 x 1GB	1 x 146GB SAS		DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
D10	6493-35U	7x9	1 x E5450	3.00	2 x 1GB	1 x 250GB SATA		DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
D10	6493-41U	7x9	1 x E5450	3.00	2 x 1GB	1 x 146GB SAS		DVD±RW	1 x FX1700	None	None	Pending	XP Pro	No	Apr 08
D10	6493-36U	7x9	1 x X5460	3.16	2 x 1GB	2 x 250GB SATA		DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
D10	6493-42U	7x9	1 x X5460	3.16	2 x 1GB	2 x 146GB SAS		DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
D10	6493-45U	7x9	1 x X5460	3.16	2 x 1GB	4 x 250GB SATA	5	DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
D10	6493-37U	7x9	2 x E5450	3.00	2 x 1GB	2 x 250GB SATA		DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
D10	6493-43U	7x9	2 x E5450	3.00	2 x 1GB	2 x 146GB SAS		DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
D10	6493-46U	7x9	2 x E5450	3.00	2 x 1GB	4 x 250GB SATA	5	DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
D10	6493-38U	7x9	2 x X5460	3.16	2 x 1GB	2 x 250GB SATA		DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
D10	6493-44U	7x9	2 x X5460	3.16	2 x 1GB	2 x 146GB SAS		DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08
D10	6493-47U	7x9	2 x X5460	3.16	2 x 1GB	4 x 250GB SATA	5	DVD±RW	1 x FX4600	None	None	Pending	XP Pro	No	Apr 08

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***

Processor	One or two processors, **Intel® Xeon® processor E5430**, **E5450**, or **X5460** with **quad-core**, 1333MHz system bus, and 12MB L2 cache
Implementation	Processor uses FC-LGA6 package, two LGA771 sockets
Memory	**2GB** std, 64GB max, **PC2-5300 667MHz DDR2**, **ECC**, fully buffered, 4-channel capable, eight 240-pin DIMM sockets; *Non-italics:* standard memory in two sockets; six sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76 to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W *Some:* **NVIDIA Quadro FX 4600**, PCIe x16 adapter, 768MB, two slot width, 2 dual-link DVI, dual DVI-I or dual VGA, 134W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	*Some:* **250GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in 6321ESB
SATA connectors	Five SATA connectors on planar
SATA DVD±RW	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive
SATA Blu-ray	None
SAS disk	*Some:* **146GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	LSI™ LSISAS1068E chipset, 5 connectors, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel 5400A Chipset**, Intel 6321ESB I/O Controller Hub for RAID 0, 1, 5, 10 support, Winbond® W83627EHG Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Four USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), six analog audio ports (line-in, mic-in, front-out, side-out, rear-out, center/sub-out), RCA-type coaxial digital in, RCA-type coaxial digital out
IEEE 1394 adptr	None
Audio	High Definition (HD) Audio, Realtek® ALC888 codec;
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Intel® 82563EB, proprietary Intel bus
Security chip	Winbond WPCT200 SafeKeeper™ Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1000 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	Five fans (power supply, first processor, second processor, rear, front disk)
Rack mount	Rack shelf support or optional sliding rack mount rail kit support

Tower



- Raven black color; metal case
- 8.3"W x 23.7"D x 17.1"H (without handle)
- 210mm W x 602mm D x 434mm H
- 65 lb (29.5kg) max configuration
- 49-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support or optional rail kit

Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 5.25", 1.6" high, external, open
Bay ④ 3.5", 1" high, external, std media reader
Bay ⑤ 3.5", 1" high, internal, std disk
Bay ⑥ 3.5", 1" high, internal, std disk
Bay ⑦ 3.5", 1" high, internal, std or opt disk
Bay ⑧ 3.5", 1" high, internal, std or opt disk
Bay ⑨ 3.5", 1" high, internal, opt disk

Slot 1: half-length, full-height, PCIe x4 (x8 mechanical)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, PCIe x4 (x8 mechanical)
Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 5: full-length, full-height, 64-bit PCI-X
Slot 6: full-length, full-height, 64-bit PCI-X
Slot 7: full-length, full-height, 32-bit PCI 2.3

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
Pending: ENERGY STAR® 4.0-compliant

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/**thinkplus/warranty
- **24x7[14] toll-free support for warranty issues during the warranty period[1] via 800-426-7378**

Preloaded operating system[20]
- Microsoft® Windows® XP Professional

Preloaded applications[5]
- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- ThinkVantage System Update
- System Migration Assistant
- Norton Internet Security™ (90 days of virus definitions)
- PC-Doctor™ (diagnostics)
- Windows Live™ Toolbar
- Windows Live Search
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW)

Accessories

Intel Xeon Quad-Core Processor E5430	43R2012
Intel Xeon Quad-Core Processor E5450	43R2014
2GB PC2-5300 DDR2 ECC FB-DIMM	43R1772
4GB PC2-5300 DDR2 ECC FB-DIMM	43R1773
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
146GB SAS 3.0Gb/s Disk (15000 rpm)	43R1993
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
Super Multi-Burner DL DVD±RW SATA 1.5Gb/s	41N5620
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
ThinkStation Rail Kit	43R1964
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L2240p Wide 22" Monitor	4422HB6
ThinkVision L2440x Wide 24" Monitor	4421HB2
Kensington® Cable Lock from Lenovo	73P2582
Laser Tilt Wheel Mouse (USB, PS/2)	41U3074
Lenovo USB Fingerprint Keyboard	73P4730
NVIDIA® Quadro® 512MB FX 570	45J7917
NVIDIA Quadro 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768

Other accessories at **lenovo.com**/accessories

See footnotes for important warranty information
US models announced April 22, 2008

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ThinkStation® D10 (6493) - August 2008

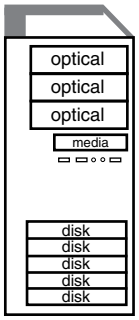
Name	Type-model	Slot x bay	Processor(s)	GHz	Memory	Disk(s)	RAID	SATA optical	Graphics adapter(s)	1394 adptr	Sound adptr	ENERGY STAR 4.0	Preload	Avail date
D10	6493-73U	7x9	2 x E5450	3.00	4 x 1GB	2 x 250GB SATA	None	DVD±RW	1 x FX3700	None	None	Pending	Bus64	Aug 08
D10	6493-A2U	7x9	2 x E5450	3.00	4 x 1GB	2 x 250GB SATA	None	DVD±RW	1 x FX1700	None	None	Pending	Bus64	Aug 08

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***
- ***These small and medium business (SMB) models are part of the US TopSeller™ Program***

Processor(s)	Two processors, **Intel® Xeon® processor E5450** with **quad-core**, 1333MHz system bus, and 12MB L2 cache
Implementation	Processor uses FC-LGA6 package, two LGA771 sockets
Memory	**4GB** std, 64GB max, **PC2-5300 667MHz DDR2**, **ECC**, fully buffered, 4-channel capable, eight 240-pin DIMM sockets; *Non-italics:* standard memory in two or four sockets; six or four sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * 76 to 150W adapters use auxiliary power connector from PSU *Some:* **NVIDIA® Quadro® FX 1700**, PCIe x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, HDTV out, 42W *Some:* **NVIDIA Quadro FX 3700**, PCIe 2.0 x16 adapter, 512MB, two dual-link DVI, dual DVI-I or dual VGA, 78W
Media reader	9-in-1 media reader, internal USB 2.0
SATA disk(s)	**250GB**, SATA 3.0Gb/s, 7200 rpm
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in 6321ESB
SATA connectors	Five SATA connectors on planar
SATA DVD±RW	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s
SAS disk	None
SAS controller	LSI™ LSISAS1068E chipset, 5 connectors, 3.0Gb/s, RAID[8] 0, 1, 1E
Chipset	**Intel 5400A Chipset**, Intel 6321ESB I/O Controller Hub for RAID 0, 1, 5, 10 support, Winbond® W83627EHG Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Four USB 2.0, serial (9-pin), keyboard (PS/2), mouse (PS/2), two ethernet (RJ-45), six analog audio ports (line-in, mic-in, front-out, side-out, rear-out, center/sub-out), RCA-type coaxial digital in, RCA-type coaxial digital out
IEEE 1394 adptr	None
Audio	High Definition (HD) Audio, Realtek® ALC888 codec;
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Intel® 82563EB, proprietary Intel bus
Security chip	Winbond WPCT200 SafeKeeper™ Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1000 watts with 120mm bottom-mounted variable speed fan, universal
Cooling	Five fans (power supply, first processor, second processor, rear, front disk)
Rack mount	Rack shelf support or optional sliding rack mount rail kit support

Tower

- Raven black color; metal case
- 8.3"W x 23.7"D x 17.1"H (without handle)
- 210mm W x 602mm D x 434mm H
- 65 lb (29.5kg) max configuration
- 49-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support or optional rail kit



Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 5.25", 1.6" high, external, open
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Bay ⑤ 3.5", 1" high, internal, std disk
Bay ⑥ 3.5", 1" high, internal, std disk
Bay ⑦ 3.5", 1" high, internal, std or opt disk
Bay ⑧ 3.5", 1" high, internal, std or opt disk
Bay ⑨ 3.5", 1" high, internal, opt disk

Slot 1: half-length, full-height, PCIe x4 (x8 mechanical)
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, PCIe x4 (x8 mechanical)
Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 5: full-length, full-height, 64-bit PCI-X
Slot 6: full-length, full-height, 64-bit PCI-X
Slot 7: full-length, full-height, 32-bit PCI 2.3

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
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- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

RoHS-compliant
Some: ENERGY STAR® 4.0-compliant

Preloaded operating system[20]

- Microsoft® Windows® Vista® Business Edition (64-bit)

✧ *Vista models:* Vista Premium logo

Preloaded applications[5]

- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- ThinkVantage System Update
- System Migration Assistant
- Norton Internet Security™ (90 days of virus definitions)
- PC-Doctor™ (diagnostics)
- Adobe® Reader
- Microsoft Office 2007 Trial (60-day)
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW)

Accessories

Intel Xeon Quad-Core Processor E5450	43R2014
2GB PC2-5300 DDR2 ECC FB-DIMM	43R1772
4GB PC2-5300 DDR2 ECC FB-DIMM	43R1773
500GB SATA 3.0Gb/s Disk (7200 rpm)	43R1990
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
146GB SAS 3.0Gb/s Disk (15000 rpm)	43R1993
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
Super Multi-Burner DL DVD±RW SATA1.5Gb/s	41N5620
Blu-ray Burner / HD-DVD Player SATA 1.5Gb/s	43R1958
ThinkStation Rail Kit	43R1964
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
USB 2.0 Portable Secure 320GB Hard Disk	43R2019
ThinkVision® L1940p Wide 19" Monitor	4424HB6
ThinkVision L2240p Wide 22" Monitor	4422HB6
ThinkVision L2440p Wide 24" Monitor	4420HB2
Laser Tilt Wheel Mouse (USB, PS/2)	41U3074
Lenovo USB Fingerprint Keyboard	73P4730
NVIDIA® Quadro® 512MB FX 570	45J7917
NVIDIA Quadro 512MB FX 1700	43R1767
NVIDIA Quadro 512MB FX 3700	43R1768
NVIDIA Quadro 768MB FX 4600	43R1769

Other accessories at **lenovo.com**/accessories

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/thinkplus/warranty**
- **24x7[14] toll-free support for warranty issues during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information
US models announced August 19, 2008

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ThinkStation

Lenovo ThinkStation D20

Lenovo ThinkStation S20 (left)
Lenovo ThinkStation D20 (right)

Lenovo ThinkStation D20

Lenovo ThinkStation D20
with Lenovo ThinkVision L2440 Monitor

ThinkStation Rail Kit (43R1964)

Lenovo ThinkStation Graphics Card
ATI™ FirePro™ 1GB V7750 (51J0511)

ThinkStation® D20 (4155) - TopSeller (UDIMM)

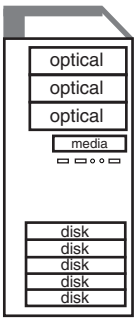
Name	Type-model	Slot x bay	Processor(s)	GHz	Memory DIMMs	Memory speed	Disk(s)	Disk size	Disk type	RAID	SATA optical	Diskette or Media reader	Graphics adapter(s)	ENERGY STAR 5.0	Pre-load	Avail date
D20	4155-28U	7x9	2 x E5540	2.53	4 x 1GB	1066MHz	1 x 500GB	3.5"	SATA		DVD±RW	Media 1	x V5700	Pending	Bus64	Apr 09
D20	4155-29U	7x9	2 x E5502	1.86	4 x 1GB	1066MHz	1 x 250GB	3.5"	SATA		DVD±RW	Media 1	x FX580	Pending	Bus64	Apr 09
D20	4155-31U	7x9	2 x X5560	2.80	4 x 1GB	1333MHz	2 x 300GB	2.5"	SATA	1	DVD±RW	Media 1	x FX1800	Pending	Bus64	Apr 09
D20	4155-32U	7x9	1 x E5506	2.13	4 x 1GB	1066MHz	1 x 250GB, 1 x 500GB	3.5"	SATA		DVD±RW	Media 1	x FX1800		Bus64	Apr 09
D20	4155-33U	7x9	1 x E5540	2.53	4 x 1GB	1066MHz	2 x 300GB	3.5"	SAS	0	DVD±RW	Media 1	x FX4800		Bus64	Apr 09
D20	4155-34U	7x9	1 x E5540	2.53	4 x 1GB	1066MHz	1 x 500GB	3.5"	SATA		DVD±RW	Media 1	x FX580		Bus64	Apr 09

- ***High performance workstation with premium graphics for specialized professionals***
- ***These small and medium business (SMB) models are part of the US TopSeller™ Program***

Processor(s)	One or two processors, **Intel® Xeon® processor E5502** with **dual-core**, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache or **Intel Xeon processor E5506** with **quad-core**, 4.8GT/s QPI, 800MHz DDR3 memory controller, and 4MB cache or **Intel Xeon processor E5540** with **quad-core**, 5.86GT/s QPI, 1066MHz DDR3 memory controller, and 8MB cache or **Intel Xeon processor X5560** with **quad-core**, 6.4GT/s QPI, 1333MHz DDR3 memory controller, and 8MB cache
Implementation	Processor uses FC-LGA package, two LGA1366 sockets
Memory	**4GB** std, 24GB max, **UDIMM**, **PC3-8500 1066MHz DDR3** or **PC3-10600 1333MHz DDR3**, **ECC**, 6-channel capable, twelve 240-pin DIMM sockets; *Non-italics:* standard memory in four sockets; eight sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * Adapters >75W use auxiliary power connector(s) from PSU *Some:* **ATI™ FirePro™ V5700**, PCIe x16 adapter, 512MB, two DisplayPort, one dual-link DVI-I, 49W *Some:* **NVIDIA® Quadro® FX 580**, PCIe x16 adapter, 512MB, two DisplayPort, one dual-link DVI-I, 40W *Some:* **NVIDIA Quadro FX 1800**, PCIe x16 adapter, 768MB, two DisplayPort, one dual-link DVI-I, 59W *Some:* **NVIDIA Quadro FX 4800**, PCIe x16 adapter, 1.5GB, two slot width, 2 DisplayPort, 1 dual-link DVI-I, 121W
Diskette drive	None
Media reader	20-in-1 media reader
SATA disk(s)	*Some:* **250GB** or **500GB**, SATA 3.0Gb/s, 7200 rpm, 3.5" *Some:* **300GB**, SATA 3.0Gb/s, 10000 rpm, 2.5"
SATA controller	Marvell 88SE6480, 3.0Gb/s, RAID[8] 0, 1, 5, 10
SATA connectors	Five SATA/SAS connectors for disks, 3 SATA connectors for opticals
SATA DVD±RW	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s
SAS disk	*Some:* **300GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	Marvell 88SE6480, 5 SAS connectors, 3.0Gb/s, RAID[8] 0, 1, 5, 10
Chipset	**Intel 5520 Chipset**, Intel ICH10, Winbond® W83627DHG-P Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, eSATA, serial (9-pin), two ethernet (RJ-45), FireWire 400 (IEEE 1394), six analog audio ports (line-in, mic-in, front-out, rear-out, center/sub-out, side out), Optical SPDIF digital out, Optical SPDIF digital in
IEEE 1394 adptr	None
Audio	High Definition (HD) Audio, Analog Devices ADI 1988A codec
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5755 and BCM5754
Security chip	Broadcom Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1060 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Bronze
Cooling	Five fans (power supply, first processor, second processor, rear, front disk)
Rack mount	Rack shelf support or optional sliding rack mount rail kit support

Tower

- Raven black color; metal case
- 8.3"W x 23.7"D x 17.1"H (without handle)
- 210mm W x 602mm D x 434mm H
- 60 lb (27.1kg) max configuration
- 49-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support or optional rail kit



Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 5.25", 1.6" high, external, open
Bay ④ 3.5", 1" high, external, std media reader
Bay ⑤ 3.5", 1" high, internal, std disk
Bay ⑥ 3.5", 1" high, internal, std or opt disk
Bay ⑦ 3.5", 1" high, internal, opt disk
Bay ⑧ 3.5", 1" high, internal, opt disk
Bay ⑨ 3.5", 1" high, internal, opt disk

Slot 1: half-length, full-height, PCIe 2.0 x1
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 5: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 6: full-length, full-height, 32-bit PCI 2.3

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

GREENGUARD® certified
RoHS-compliant

Preloaded operating system[20]
- Microsoft® Windows® Vista® Business Edition (64-bit)
✧ Vista Premium logo

Preloaded applications[5] (only some listed)
- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- Norton Internet Security™ (90 days of virus definitions)
- PC-Doctor™ (diagnostics)
- Microsoft Office 2007 Trial (60-day)
- Corel® WinDVD® (DVD±RW)

Accessories

2GB PC3-8500 DDR3 ECC UDIMM	51J0504
1GB PC3-10600 DDR3 ECC UDIMM	43R2032
2GB PC3-10600 DDR3 ECC UDIMM	43R2033
Blu-ray™ Burner SATA 1.5Gb/s	45K1675
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
150GB SATA 3.0Gb/s Disk (10000 rpm) 2.5"	43R2030
300GB SATA 3.0Gb/s Disk (10000 rpm) 2.5"	43R2031
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
ThinkStation Rail Kit	43R1964
ThinkVision® L2440p Wide 24" Monitor	4420HB2
ATI™ FirePro™ 1GB V7750	51J0511
NVIDIA® Quadro® 1.5GB FX 4800	45K1674

Other accessories at **lenovo.com**/accessories

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/thinkplus/warranty**
- **24x7[14] toll-free support for warranty issues during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information
US models announced March 31, 2009

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ThinkStation® D20 (4155) - TopSeller (RDIMM)

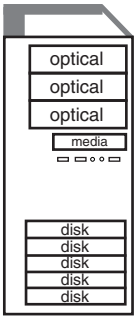
Name	Type-model	Slot x bay	Processor(s)	GHz	Memory	Disk(s)	Disk size	Disk type	RAID	SATA optical	Diskette or Media reader	Graphics adapter(s)	ENERGY STAR 5.0	Preload	Avail date
D20	4155-27U	7x9	2 x E5540	2.53	4 x 1GB	2 x 300GB	2.5"	SATA	1	DVD±RW	Media	1 x FX4800	Pending	XP Pro 64	Apr 09

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***
- ***These small and medium business (SMB) models are part of the US TopSeller™ Program***

Processor(s)	One or two processors, **Intel Xeon processor E5540** with **quad-core**, 5.86GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 1066MHz DDR3 memory controller, and 8MB cache
Implementation	Processor uses FC-LGA package, two LGA1366 sockets
Memory	**4GB** std, 96GB max, **RDIMM**, **PC3-8500 1066MHz DDR3**, **ECC**, registered, 6-channel capable, twelve 240-pin DIMM sockets; *Non-italics:* standard memory in four sockets; eight sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * Adapters >75W use auxiliary power connector(s) from PSU **NVIDIA Quadro FX 4800**, PCIe x16 adapter, 1.5GB, two slot width, two DisplayPort, one dual-link DVI, 121W
Diskette drive	None
Media reader	20-in-1 media reader
SATA disk(s)	**300GB**, SATA 3.0Gb/s, 10000 rpm, 2.5"
SATA controller	Marvell 88SE6480, 3.0Gb/s, RAID[8] 0, 1, 5, 10
SATA connectors	Five SATA/SAS connectors for disks, 3 SATA connectors for opticals
SATA DVD±RW	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s
SAS disk	None
SAS controller	Marvell 88SE6480, 5 SAS connectors, 3.0Gb/s, RAID[8] 0, 1, 5, 10
Chipset	**Intel 5520 Chipset**, Intel ICH10, Winbond® W83627DHG-P Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, eSATA, serial (9-pin), two ethernet (RJ-45), FireWire 400 (IEEE 1394), six analog audio ports (line-in, mic-in, front-out, rear-out, center/sub-out, side out), Optical SPDIF digital out, Optical SPDIF digital in
IEEE 1394 adptr	None
Audio	High Definition (HD) Audio, Analog Devices ADI 1988A codec
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5755 and BCM5754
Security chip	Broadcom Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1060 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Bronze
Cooling	Seven fans (power supply, first processor, second processor, rear, front disk, first memory bank, second memory bank)
Rack mount	Rack shelf support or optional sliding rack mount rail kit support

Tower

- Raven black color; metal case
- 8.3"W x 23.7"D x 17.1"H (without handle)
- 210mm W x 602mm D x 434mm H
- 60 lb (27.1kg) max configuration
- 49-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support or optional rail kit



Bay ①	5.25",	1.6" high,	external, std optical
Bay ②	5.25",	1.6" high,	external, open
Bay ③	5.25",	1.6" high,	external, open
Bay ④	3.5",	1" high,	external, std media reader
Bay ⑤	3.5",	1" high,	internal, std disk
Bay ⑥	3.5",	1" high,	internal, std or opt disk
Bay ⑦	3.5",	1" high,	internal, opt disk
Bay ⑧	3.5",	1" high,	internal, opt disk
Bay ⑨	3.5",	1" high,	internal, opt disk

Slot 1: half-length, full-height, PCIe 2.0 x1
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 5: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 6: full-length, full-height, 32-bit PCI 2.3

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

GREENGUARD® certified
RoHS-compliant

Preloaded operating system[20]

- Microsoft® Windows® XP Professional (64-bit)

✧ Vista Premium logo

Preloaded applications[5]

- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- System Migration Assistant
- Norton Internet Security™ (90 days of virus definitions)
- PC-Doctor™ (diagnostics)
- Adobe® Reader
- Microsoft Office 2007 Trial (60-day)
- Sonic RecordNow and Drive Letter Access (DVD±RW)
- Corel® WinDVD® (DVD±RW)

Accessories

Blu-ray™ Burner SATA 1.5Gb/s	45K1675
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
150GB SATA 3.0Gb/s Disk (10000 rpm) 2.5"	43R2030
300GB SATA 3.0Gb/s Disk (10000 rpm) 2.5"	43R2031
146GB SAS 3.0Gb/s Disk (15000 rpm)	43R1993
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
ThinkStation Rail Kit	43R1964
USB 2.0 Ultra Secure Memory Key 8GB	45J5918
ThinkVision® L2440p Wide 24" Monitor	4420HB2
Laser Tilt Wheel Mouse (USB, PS/2)	41U3074
ATI™ FirePro™ 512MB V5700	51J0509
ATI FirePro 1GB V7750	51J0511
NVIDIA® Quadro® 768MB FX 1800	45K1672
NVIDIA Quadro 1.5GB FX 4800	45K1674

Other accessories at **lenovo.com**/accessories

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com**/thinkplus/warranty
- **24x7[14] toll-free support for warranty issues during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information
US model announced March 31, 2009

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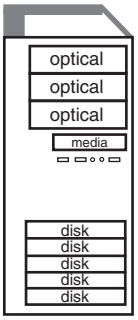
Name	Type-model	Slot x bay	Processor(s)	GHz	Memory DIMMs	Memory speed	Disk(s)	Disk size	Disk type	RAID	SATA optical	Diskette or Media reader	Graphics adapter(s)	1394 adptr	ENERGY STAR 5.0	Preload	Avail date
D20	4158-23U	7x9	2 x X5560	2.80	4 x 2GB	1333MHz	2 x 300GB	2.5"	SATA	1	DVD±RW	Media	1 x FX4800		Pending	Bus64	Apr 09
D20	4158-24U	7x9	2 x E5540	2.53	2 x 2GB	1066MHz	2 x 147GB	3.5"	SAS		DVD±RW	Media	1 x FX1800		Pending	Bus64	Apr 09
D20	4158-25U	7x9	2 x E5506	2.13	4 x 1GB	1066MHz	1 x 147GB	3.5"	SAS		DVD±RW	Media	1 x FX1800	1394	Pending	Bus64	Apr 09
D20	4158-26U	7x9	1 x X5550	2.66	4 x 1GB	1066MHz	1 x 250GB	3.5"	SATA		DVD±RW	Media	1 x FX380			Bus64	Apr 09
D20	4158-27U	7x9	2 x X5550	2.66	4 x 1GB	1333MHz	3 x 300GB	2.5"	SATA	5	DVD±RW	Media	1 x FX1800		Pending	Bus64	Apr 09
D20	4158-28U	7x9	1 x X5560	2.80	4 x 1GB	1066MHz	1 x 500GB	3.5"	SATA		DVD±RW	Media	1 x FX580			Bus64	Apr 09
D20	4158-29U	7x9	2 x E5540	2.53	2 x 2GB	1066MHz	1 x 500GB	3.5"	SATA		DVD±RW	Media	1 x FX1800		ES 5.0	Bus64	Apr 09
D20	4158-31U	7x9	1 x X5550	2.66	2 x 2GB	1333MHz	2 x 147GB	3.5"	SAS	1	DVD±RW	Media	1 x FX580	1394		Bus64	Apr 09
D20	4158-49U	7x9	2 x E5506	2.13	4 x 1GB	1066MHz	2 x 300GB	2.5"	SATA	0	DVD±RW	Media	1 x V5700		Pending	Bus64	Apr 09
D20	4158-51U	7x9	2 x E5540	2.53	4 x 1GB	1066MHz	1 x 500GB	3.5"	SATA		DVD±RW	Media	1 x V3700		Pending	Bus64	Apr 09

Processor(s)	One or two processors, **Intel Xeon processor E5506** with **quad-core**, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache or **Intel Xeon processor E5540** with **quad-core**, 5.86GT/s QPI, 1066MHz DDR3 memory controller, and 8MB cache or **Intel Xeon processor X5550** or **X5560** with **quad-core**, 6.4GT/s QPI, 1333MHz DDR3 memory controller, and 8MB cache
Implementation	Processor uses FC-LGA package, two LGA1366 sockets
Memory	**4GB** or **8GB** std, 24GB max, **UDIMM**, **PC3-8500 1066MHz DDR3** or **PC3-10600 1333MHz DDR3**, **ECC**, 6-channel capable, twelve 240-pin DIMM sockets; *Non-italics:* standard memory in two or four sockets; ten or eight sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * Adapters >75W use auxiliary power connector(s) from PSU *Some:* **ATI™ FirePro™ V3700**, PCIe x16 adapter, 256MB, two dual-link DVI-I, 35W *Some:* **ATI FirePro V5700**, PCIe x16 adapter, 512MB, two DisplayPort, one dual-link DVI-I, 49W *Some:* **NVIDIA® Quadro® FX 380**, PCIe x16 adapter, 256MB, two dual-link DVI-I, 35W *Some:* **NVIDIA Quadro FX 580**, PCIe x16 adapter, 512MB, two DisplayPort, one dual-link DVI-I, 40W *Some:* **NVIDIA Quadro FX 1800**, PCIe x16 adapter, 768MB, two DisplayPort, one dual-link DVI-I, 59W *Some:* **NVIDIA Quadro FX 4800**, PCIe x16 adapter, 1.5GB, two slot width, 2 DisplayPort, 1 dual-link DVI-I, 121W
Diskette drive	None
Media reader	20-in-1 media reader
SATA disk(s)	*Some:* **250GB** or **500GB**, SATA 3.0Gb/s, 7200 rpm, 3.5" *Some:* **300GB**, SATA 3.0Gb/s, 10000 rpm, 2.5"
SATA controller	Marvell 88SE6480, 3.0Gb/s, RAID[8] 0, 1, 5, 10
SATA connectors	Five SATA/SAS connectors for disks, 3 SATA connectors for opticals
SATA DVD±RW	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s
SAS disk	*Some:* **147GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	Marvell 88SE6480, 5 SAS connectors, 3.0Gb/s, RAID[8] 0, 1, 5, 10
Chipset	**Intel 5520 Chipset**, Intel ICH10, Winbond® W83627DHG-P Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, eSATA, serial (9-pin), two ethernet (RJ-45), FireWire 400 (IEEE 1394), six analog audio ports (line-in, mic-in, front-out, rear-out, center/sub-out, side out), Optical SPDIF digital out, Optical SPDIF digital in
IEEE 1394 adptr	*Some:* FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear
Audio	High Definition (HD) Audio, Analog Devices ADI 1988A codec
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5755 and BCM5754
Security chip	Broadcom Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1060 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Bronze
Cooling	Five fans (power supply, first processor, second processor, rear, front disk)
Rack mount	Rack shelf support or optional sliding rack mount rail kit support

Tower

- Raven black color; metal case
- 8.3"W x 23.7"D x 17.1"H (without handle)
- 210mm W x 602mm D x 434mm H
- 60 lb (27.1kg) max configuration
- 49-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support or optional rail kit



Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 5.25", 1.6" high, external, open
Bay ④ 3.5", 1" high, external, std media reader
Bay ⑤ 3.5", 1" high, internal, std disk
Bay ⑥ 3.5", 1" high, internal, std or opt disk
Bay ⑦ 3.5", 1" high, internal, opt disk
Bay ⑧ 3.5", 1" high, internal, opt disk
Bay ⑨ 3.5", 1" high, internal, opt disk

Slot 1: half-length, full-height, PCIe 2.0 x1
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 5: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 6: full-length, full-height, 32-bit PCI 2.3

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Supports ThinkVantage® technologies

29U: EPEAT™ Gold rating
29U: ENERGY STAR® 4.0-compliant
GREENGUARD® certified
RoHS-compliant

Preloaded operating system[20]
- Microsoft® Windows® Vista® Business Edition (64-bit)
- ✧ Vista Premium logo

Preloaded applications[5] (only some listed)
- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- Norton Internet Security™ (90 days of virus definitions)
- Corel® WinDVD® (DVD±RW)

Accessories

2GB PC3-8500 DDR3 ECC UDIMM	51J0504
1GB PC3-10600 DDR3 ECC UDIMM	43R2032
2GB PC3-10600 DDR3 ECC UDIMM	43R2033
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
300GB SATA 3.0Gb/s Disk (10000 rpm) 2.5"	43R2031
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
ThinkStation Rail Kit	43R1964
ThinkVision® L2440p Wide 24" Monitor	4420HB2
ATI™ FirePro™ 1GB V7750	51J0511
NVIDIA® Quadro® 1.5GB FX 4800	45K1674

Other accessories at **lenovo.com**/accessories

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com/thinkplus/warranty**
- **24x7[14] toll-free support for warranty issues during the warranty period[1] via 800-426-7378**

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ThinkStation® D20 (4158) - RDIMM

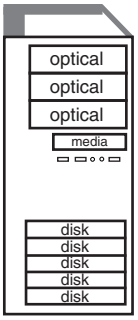
Name	Type-model	Slot x bay	Processor(s)	GHz	Memory	Disk(s)	Disk type	Disk type	RAID	SATA optical	Diskette or Media reader	Graphics adapter(s)	1394 adptr	ENERGY STAR 5.0	Preload	Avail date
D20	4158-21U	7x9	2 x E5506	2.13	4 x 1GB	2 x 147GB	3.5"	SAS	0	DVD±RW	Media	1 x FX1800	1394	Pending	Business 64	Apr 09
D20	4158-22U	7x9	1 x X5560	2.80	2 x 1GB	1 x 250GB	3.5"	SATA		DVD±RW	Media	1 x FX1800			Business 32	Apr 09
D20	4158-52U	7x9	2 x E5540	2.53	4 x 1GB	2 x 147GB	3.5"	SAS	0	DVD±RW	Media	1 x FX4800		Pending	XP Pro 64	Apr 09
D20	4158-53U	7x9	2 x E5540	2.53	4 x 1GB	2 x 300GB	2.5"	SATA	1	DVD±RW	Media	1 x FX4800		Pending	XP Pro 64	Apr 09

- ***High performance workstation with premium graphics for specialized professionals***
- ***Environmentally friendly, cool, and quiet with rock solid engineering***

Processor(s)	One or two processors, **Intel Xeon processor E5540** with **quad-core**, 5.86GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 1066MHz DDR3 memory controller, and 8MB cache or **Intel Xeon processor X5550** or **X5560** with **quad-core**, 6.4GT/s QPI, 1333MHz DDR3 memory controller, and 8MB cache
Implementation	Processor uses FC-LGA package, two LGA1366 sockets
Memory	**2GB** or **4GB** std, 96GB max, **RDIMM**, **PC3-8500 1066MHz DDR3**, **ECC**, registered, 6-channel capable, twelve 240-pin DIMM sockets; *Non-italics:* standard memory in two or four sockets; ten or eight sockets available
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * Adapters >75W use auxiliary power connector(s) from PSU *Some:* **NVIDIA® Quadro® FX 1800**, PCIe x16 adapter, 768MB, two DisplayPort, one dual-link DVI-I, 59W *Some:* **NVIDIA Quadro FX 4800**, PCIe x16 adapter, 1.5GB, two slot width, 2 DisplayPort, 1 dual-link DVI-I, 121W
Diskette drive	None
Media reader	20-in-1 media reader
SATA disk(s)	*Some:* **250GB** or **500GB**, SATA 3.0Gb/s, 7200 rpm, 3.5" *Some:* **300GB**, SATA 3.0Gb/s, 10000 rpm, 2.5"
SATA controller	Marvell 88SE6480, 3.0Gb/s, RAID[8] 0, 1, 5, 10
SATA connectors	Five SATA/SAS connectors for disks, 3 SATA connectors for opticals
SATA DVD±RW	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s
SAS disk	*Some:* **147GB**, Serial Attached SCSI, 3.0Gb/s, 15000 rpm
SAS controller	Marvell 88SE6480, 5 SAS connectors, 3.0Gb/s, RAID[8] 0, 1, 5, 10
Chipset	**Intel 5520 Chipset**, Intel ICH10, Winbond® W83627DHG-P Super I/O
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394)
Rear ports	Eight USB 2.0, eSATA, serial (9-pin), two ethernet (RJ-45), FireWire 400 (IEEE 1394), six analog audio ports (line-in, mic-in, front-out, rear-out, center/sub-out, side out), Optical SPDIF digital out, Optical SPDIF digital in
IEEE 1394 adptr	*Some:* FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear
Audio	High Definition (HD) Audio, Analog Devices ADI 1988A codec
Speaker	Internal speaker for business audio
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5755 and BCM5754
Security chip	Broadcom Trusted Platform Module, TCG 1.2-compliant
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1060 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Bronze
Cooling	Seven fans (power supply, first processor, second processor, rear, front disk, first memory bank, second memory bank)
Rack mount	Rack shelf support or optional sliding rack mount rail kit support

Tower

- Raven black color; metal case
- 8.3"W x 23.7"D x 17.1"H (without handle)
- 210mm W x 602mm D x 434mm H
- 60 lb (27.1kg) max configuration
- 49-liter
- Removable handle on top front
- Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons
- Rack shelf support or optional rail kit



Bay ① 5.25", 1.6" high, external, std optical
Bay ② 5.25", 1.6" high, external, open
Bay ③ 5.25", 1.6" high, external, open
Bay ④ 3.5", 1" high, external, std media reader
Bay ⑤ 3.5", 1" high, internal, std disk
Bay ⑥ 3.5", 1" high, internal, std or opt disk
Bay ⑦ 3.5", 1" high, internal, opt disk
Bay ⑧ 3.5", 1" high, internal, opt disk
Bay ⑨ 3.5", 1" high, internal, opt disk

Slot 1: half-length, full-height, PCIe 2.0 x1
Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 3: full-length, full-height, 32-bit PCI 2.3
Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)
Slot 5: full-length, full-height, PCIe x4 (x16 mechanical)
Slot 6: full-length, full-height, 32-bit PCI 2.3

SECURITY

- Security chip (see information on left)
- Side cover lock (ships with two identical keys)
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

Preloaded operating system[20]

- Microsoft® Windows® XP Professional (64-bit)
- Microsoft Windows Vista® Business Edition (32-bit)
- Microsoft Windows Vista Business Edition (64-bit)

✧ Vista Premium logo

Preloaded applications[5] (all OSes; only some listed)

- Rescue and Recovery™
- Client Security Solution™
- ThinkVantage Productivity Center
- Norton Internet Security™ (90 days of virus definitions)
- Microsoft Office 2007 Trial (60-day)
- Corel® WinDVD® (DVD±RW)

Accessories

Blu-ray™ Burner SATA 1.5Gb/s	45K1675
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918
150GB SATA 3.0Gb/s Disk (10000 rpm) 2.5"	43R2030
300GB SATA 3.0Gb/s Disk (10000 rpm) 2.5"	43R2031
146GB SAS 3.0Gb/s Disk (15000 rpm)	43R1993
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994
ThinkStation Rail Kit	43R1964
ThinkVision® L2440p Wide 24" Monitor	4420HB2
ATI™ FirePro™ 256MB V3700	51J0509
ATI FirePro 512MB V5700	51J0510
ATI FirePro 1GB V7750	51J0511
NVIDIA® Quadro® 768MB FX 1800	45K1672
NVIDIA Quadro 1.5GB FX 4800	45K1674

Other accessories at **lenovo.com**/accessories

Supports ThinkVantage® technologies

GREENGUARD® certified
RoHS-compliant

LIMITED WARRANTY[1]

- **3-year parts and labor**
- **Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts[3], 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)**
- **ThinkPlus™ services available; see http://lenovo.com**/thinkplus/warranty
- **24x7[14] toll-free support for warranty issues during the warranty period[1] via 800-426-7378**

See footnotes for important warranty information
US models announced March 31, 2009

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ThinkStation® S10, S20, D10, D20 Accessories

Partial list of accessories supported on ThinkStation S10, S20, D10, and D20

Processors

D10:

Intel® Xeon® Quad-Core Processor E5405	43R2009	*ann 07/29/08*
Intel Xeon Quad-Core Processor E5410	43R2010	*ann 07/29/08*
Intel Xeon Quad-Core Processor E5420	43R2011	*ann 07/29/08*
Intel Xeon Quad-Core Processor E5430	43R2012	*ann 07/29/08*
Intel Xeon Quad-Core Processor E5440	43R2013	*ann 07/29/08*
Intel Xeon Quad-Core Processor E5450	43R2014	*ann 07/29/08*
Intel Xeon Quad-Core Processor E5460	43R2016	*ann 07/29/08*

Memory

S10:

1GB PC3-8500 DDR3 ECC UDIMM	41U5251	*ann 12/18/07*
2GB PC3-8500 DDR3 ECC UDIMM	41U5252	*ann 12/18/07*

S20, D20:

1GB PC3-8500 DDR3 ECC UDIMM	51J0503	*ann 03/31/09*
2GB PC3-8500 DDR3 ECC UDIMM	51J0504	*ann 03/31/09*
1GB PC3-10600 DDR3 ECC UDIMM	43R2032	*ann 03/31/09*
2GB PC3-10600 DDR3 ECC UDIMM	43R2033	*ann 03/31/09*

D10 (install in pairs only):

1GB PC2-5300 DDR2 ECC FB-DIMM	43R1771	*ann 03/11/08*
2GB PC2-5300 DDR2 ECC FB-DIMM	43R1772	*ann 03/11/08*
4GB PC2-5300 DDR2 ECC FB-DIMM	43R1773	*ann 03/11/08*

Optical

DVD-ROM DL SATA1.5Gb/s 16X-48X Max[4]	41N5618	*ann 09/26/06*
Super Multi-Burner DL DVD±RW SATA1.5Gb/s	41N5620	*ann 09/26/06*
Blu-ray Burner / HD-DVD Player SATA1.5Gb/s	43R1958	*ann 12/18/07*
Blu-ray™ Burner SATA1.5Gb/s	45K1675	*ann 03/31/09*

Storage and removable storage

S10, S20, D10, D20 preconfigured with SATA disks:

160GB SATA 3.0Gb/s Disk (7200 rpm)	09N4254	*ann 05/19/03*
250GB SATA 3.0Gb/s Disk (7200 rpm)	41N3015	*ann 01/24/06*
500GB SATA 3.0Gb/s Disk (7200 rpm)	43R1990	*ann 11/06/07*
750GB SATA 3.0Gb/s Disk (7200 rpm)	43R1991	*ann 12/18/07*
1TB SATA 3.0Gb/s Disk (7200 rpm)	45J7918	*ann 08/19/08*
150GB SATA 3.0Gb/s Disk (10000 rpm) 2.5"	43R2030	*ann 03/31/09*
300GB SATA 3.0Gb/s Disk (10000 rpm) 2.5"	43R2031	*ann 03/31/09*

S10, S20, preconfigured with SAS disks and the SAS controller, D10, D20 preconfigured with SAS disks:

146GB SAS 3.0Gb/s Disk (15000 rpm)	43R1993	*ann 03/11/08*
300GB SAS 3.0Gb/s Disk (15000 rpm)	43R1994	*ann 03/11/08*

All:

USB 2.0 Essential Memory Key 8GB	45J7905	*ann 07/15/08*
USB 2.0 Essential Memory Key 32GB	45K1258	*ann 10/28/08*
USB 2.0 Security Memory Key 4GB	41U5120	*ann 07/17/07*
USB 2.0 Ultra Secure Memory Key 2GB	45J5916	*ann 08/26/08*
USB 2.0 Ultra Secure Memory Key 4GB	45J5917	*ann 08/26/08*
USB 2.0 Ultra Secure Memory Key 8GB	45J5918	*ann 08/26/08*

All:

USB Portable Diskette Drive	05K9276	*ann 06/05/00*
USB 2.0 CD-RW/DVD-ROM Combo II Drive	40Y8637	
USB 2.0 Portable 160GB Hard Disk	43R1784	*ann 09/23/08*
USB 2.0 Portable 320GB Hard Disk	45K1689	*ann 03/17/09*
USB 2.0 Portable Secure 160GB Hard Disk	43R2018	*ann 11/18/08*
USB 2.0 Portable Secure 320GB Hard Disk	43R2019	*ann 11/18/08*
USB 2.0 Super Multi-Burner Drive	41N5565	*ann 01/23/07*

Keyboard

Preferred Pro USB Keyboard	73P5220	*ann 06/21/05*
Enhanced Performance USB Keyboard	73P2620	*ann 03/23/04*
Wireless Kybd & Opt Wheel Mouse (USB)	73P4067	*ann 12/07/04*
Lenovo USB Fingerprint Keyboard	73P4730	*ann 02/22/05*
Lenovo USB Smartcard Keyboard	51J0155	*ann 03/24/09*

More information at **www.lenovo.com/support/keyboards**

Mouse

Optical Wheel Mouse (USB)	06P4069	*ann 05/21/03*
Optical ScrollPoint® Mouse (USB, PS/2)	31P7405	*ann 08/27/02*
Laser Tilt Wheel Mouse (USB, PS/2)	41U3074	*ann 01/23/07*
Lenovo Wireless Laser Mouse (blk, via USB)	45K1696	*ann 11/25/08*
Lenovo Wireless Laser Mouse (red, via USB)	51J0198	*ann 11/25/08*

More information at **www.lenovo.com/support/mice**

Monitors

ThinkVision® L174 17" Monitor	9227AE1	*ann 04/15/08*
ThinkVision L1700p 17" Monitor	9417HE2	*ann 09/17/08*
ThinkVision L1900p 19" Monitor	4431HE1	*ann 11/11/08*
ThinkVision L1940p Wide 19" Monitor	4424HB6	*ann 09/17/08*
ThinkVision L200p Wide 20.1" Monitor	4438HB6	*ann 04/15/08*
ThinkVision L2240p Wide 22" Monitor	4422HB6	*ann 09/17/08*
ThinkVision L2440p Wide 24" Monitor	4420HB2	*ann 09/17/08*
ThinkVision L2440x Wide 24" Monitor	4421HB2	*ann 09/17/08*

More information at **www.lenovo.com/thinkvision**

Monitor accessories[46]

ThinkVision USB Soundbar	40Y7616	*ann 08/23/05*
ThinkVision Soundbar	45K1263	*ann 09/16/08*
Kensington® Cable Lock from Lenovo	73P2582	*ann 12/29/03*
Kensington Twin Head Cable Lock	45K1620	*ann 09/30/08*
Radial Arm	19K4464	*ann 05/05/00*

[46]Compatible on selected Lenovo and ThinkVision monitors.

More information at **www.lenovo.com/support/monitoraccessories**

Graphics

S10, D10:

NVIDIA® Quadro® 256MB NVS 290	43R1765	*ann 12/18/07*
NVIDIA Quadro 256MB FX 370	43R1766	*ann 12/18/07*
NVIDIA Quadro 256MB FX 570	45J7917	*ann 08/19/08*
NVIDIA Quadro 512MB FX 1700	43R1767	*ann 12/18/07*
NVIDIA Quadro 512MB FX 3700	43R1768	*ann 08/19/08*
NVIDIA Quadro 768MB FX 4600	43R1769	*ann 12/18/07*
NVIDIA Quadro 1.5GB FX 4800	45K1674	*ann 03/31/09*

S20, D20:

ATI™ FirePro™ 256MB V3700	51J0509	*ann 03/31/09*
ATI FirePro 512MB V5700	51J0510	*ann 03/31/09*
ATI FirePro 1GB V7750	51J0511	*ann 03/31/09*
NVIDIA Quadro 256MB FX 380	45K1670	*ann 03/31/09*
NVIDIA Quadro 512MB FX 580	45K1671	*ann 03/31/09*
NVIDIA Quadro 768MB FX 1800	45K1672	*ann 03/31/09*
NVIDIA Quadro 1.5GB FX 4800	45K1674	*ann 03/31/09*

More information at **www.lenovo.com/support/graphiccards**

Multimedia

USB 2.0 Lenovo Multimedia Headset	40Y8518	*ann 06/27/06*
USB 2.0 Lenovo Webcam	40Y8519	*ann 08/29/06*

Security

Kensington Cable Lock from Lenovo	73P2582	*ann 12/29/03*
Kensington Twin Head Cable Lock	45K1620	*ann 09/30/08*
USB Gemplus GemPC Smart Card Reader	41N3040	*ann 02/21/06*

Rack mount accessories

D10, D20:

ThinkStation Rail Kit	43R1964	*ann 03/11/08*

More information at **www.lenovo.com/support/railkit**

Medialess License Key (MLK)

Microsoft® Office 2007 Basic, English	43R1528	*ann 01/31/07*
Microsoft Office 2007 Small Business, Engl	43R1534	*ann 01/31/07*
Microsoft Office 2007 Professional, English	43R1531	*ann 01/31/07*

Other accessories at **www.lenovo.com/accessories**

Accessories Guide pdf at **www.lenovo.com/accessoriesguide**

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ThinkStation® - ThinkPlus™ Services

Partial list of Lenovo® ThinkPlus Services[7] for ThinkStation workstations

For more information see:
http://www.lenovo.com/services_warranty/us/en/index.html

ThinkPlus service upgrade options

ThinkStation workstation with 3-year Onsite warranty

LOR = Lenovo Onsite Repair

4-year LOR 9x5 Next Business Day	43R8983
5-year LOR 9x5 Next Business Day	43R8987

ThinkPlus Secure Business

Lenovo Online Data Backup

- Secure offsite data storage
- 256-bit Advanced Encryption System
- Data recovery or access in case of an unforeseen event
- Automatic, remote management
- Choose which business critical data to back up

1-year Lenovo Online Data Backup - *50GB*	45K5849
1-year Lenovo Online Data Backup - *Unlimited*	45K5870

ThinkPlus Priority Support for enterprise customers

- 9x5 next-business-day response Lenovo Onsite Repair
- 24x7 support with priority routing and advanced level technicians

ThinkStation workstation with 1-year Onsite warranty

3-year Priority Support	45J9080

ThinkStation workstation with 3-year Onsite warranty

3-year Priority Support	45J9081
4-year Priority Support	45J9082
5-year Priority Support	45J9083
3-year Priority Support 4-hour response	45J9084
4-year Priority Support 4-hour response	45J9085
5-year Priority Support 4-hour response	45J9086

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Availability: All offers subject to availability. Lenovo reserves the right to alter product offerings and specifications at any time, without notice. Lenovo is not responsible for photographic or typographic errors.

Warranty: For a copy of applicable product warranties, write to: Warranty Information, 500 Park Offices Drive, RTP, NC, 27709, Attn: Dept ZPYA/B600. Lenovo makes no representation or warranty regarding third party products or services.

[1] **Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges.

[2] **Hard drive:** GB = billion bytes, TB = trillion bytes. Accessible capacity is less.

[3] **Systems with limited onsite service** are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by Lenovo. Lenovo will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by Lenovo for onsite replacement. For a list of onsite replaceable parts, contact Lenovo. In the United States call 1-800-426-7378. Support unrelated to a warranty issue may be subject to additional charges.

[5] **Included software** may differ from its retail version (if available), and may not include user manuals or all program functionality. License agreements may apply.

[6] **Multi-Burner Plus** (part number 73P3305 or 73P3370) is a DVD±RW device that reads and writes to DVD-RAM, DVD-R, DVD-RW, DVD+R, and DVD+RW. It also reads and writes to CD-R and CD-RW media. 73P3370 also writes to DVD+R double layer media.

[7] **ThinkPlus Services:** These services are available for machines normally used for business, professional, or trade purposes, rather than personal, family, or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. Service levels are response time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), a part will be express shipped to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. P&L means parts and labor. P/U means pick-up. See ThinkPlus terms and conditions for complete details and restrictions.

[8] **RAID:** Supported RAID levels for a system will vary from the stated capabilities of the RAID controller due to dependencies on the number and capacity of physical disks in the system and on customer requirements for performance, fault tolerance, or data redundancy.
RAID levels and requirements:

- *RAID 0 (striping)* provides increased performance by writing data across multiple drives.
- *RAID 1 (mirroring)* provides fault tolerance by writing the data on two drives.
- *RAID 5 (striping with parity)* uses distributed parity data to provide fault tolerance more efficiently than RAID 1. Requires three or more drives.
- *RAID 10 (or RAID 1+0)* combines RAID 1 and RAID 0 to create a stripe of mirrors that is fault tolerant while offering increased performance. Requires four drives.

[9] **International Warranty Service** is available in any country in which this product is sold and serviced. Service delivery methods and parts availability vary by country, may be different from that in the country of purchase, and are subject to change without notice. Fees and restrictions may apply in some countries.

[14] **Response times may vary.** May exclude some holidays. Telephone support may be subject to additional charges.

[20] **Operating System:** Level of support varies by operating system. Operating systems not preloaded on the system may not provide full feature functionality. Refer to lenovo.com/pc/support and enter your machine type and model number for more information.

ThinkStation

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Visit **www.lenovo.com/psref** for the latest version of Personal Systems Reference.

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